SEQUENCE LISTING

<110> Stefan Bauer
Grayson B. Lipford
Hermann Wagner

<120> PROCESS FOR HIGH THROUGHPUT SCREENING OF CpG-BASED IMMUNO-AGONIST/ANTAGONIST

<130> C1041/7016 (AWS)

<140> US 09/954,987
<141> 2001-09-17

<150> US 60/233,035
<151> 2000-09-15

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<151> 2001-01-23

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<151> 2001-06-22

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Thr Ile Glu Pro Arg Thr Phe Leu Ala Met Arg Thr Leu Glu Glu Leu
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Lys Asn Phe Met Asp Arg Cys Lys Asn Phe Lys Phe Thr Met Asp Leu
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Met Leu His Ser Leu Ser Leu Ala His Asn Asp Ile His Thr Arg Val
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Ser Ser His Leu Asn Ser Asn Ser Val Arg Phe Leu Asp Phe Ser Gly
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Asn Gly Met Gly Arg Met Trp Asp Glu Gly Gly Leu Tyr Leu His Phe
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Trp Asp Cys Phe Gly Leu Ser Leu Leu Ala Val Ala Val Gly Met Val
            820                 825                 830
Val Pro Ile Leu His His Leu Cys Gly Trp Asp Val Trp Tyr Cys Phe
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His Leu Cys Leu Ala Trp Leu Pro Leu Leu Ala Arg Ser Arg Arg Ser
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<221> misc_feature

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        35                  40                  45
Phe Leu Lys Ser Val Pro His Phe Ser Met Ala Ala Pro Arg Gly Asn
    50                  55                  60
Val Thr Ser Leu Ser Leu Ser Ser Asn Arg Ile His His Leu His Asp
65                  70                  75                  80
Ser Asp Phe Ala His Leu Pro Ser Leu Arg His Leu Asn Leu Lys Trp
                85                  90                  95
Asn Cys Pro Pro Val Gly Leu Ser Pro Met His Phe Pro Cys His Met
            100                 105                 110
Thr Ile Glu Pro Ser Thr Phe Leu Ala Val Pro Thr Leu Glu Glu Leu
        115                 120                 125
Asn Leu Ser Tyr Asn Asn Ile Met Thr Val Pro Ala Leu Pro Lys Ser
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Leu Ile Ser Leu Ser Leu Ser His Thr Asn Ile Leu Met Leu Asp Ser
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Ala Ser Leu Ala Gly Leu His Ala Leu Arg Phe Leu Phe Met Asp Gly
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Asn Asn Leu Thr Val Val Pro Arg Asn Leu Pro Ser Ser Leu Glu Tyr
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Leu Leu Leu Ser Tyr Asn Arg Ile Val Lys Leu Ala Pro Glu Asp Leu
225                 230                 235                 240
Ala Asn Leu Thr Ala Leu Arg Val Leu Asp Val Gly Gly Asn Cys Arg
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Arg Cys Asp His Ala Pro Asn Pro Cys Met Glu Cys Pro Arg His Phe
            260                 265                 270
Pro Gln Leu His Pro Asp Thr Phe Ser His Leu Ser Arg Leu Glu Gly
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Leu Val Leu Lys Asp Ser Ser Leu Ser Trp Leu Asn Ala Ser Trp Phe
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His Leu Ser Leu Ala Pro Ser Phe Gly Ser Leu Val Ala Leu Lys Glu
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Gln Pro Gly Asp Leu Ala Pro Ala Pro Val Asp Thr Pro Ser Ser Glu
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Pro Arg Leu Glu Ala Leu Asp Leu Ser Tyr Asn Ser Gln Pro Phe Gly
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Gln Gln Leu Cys Ser Thr Ser Leu Arg Ala Leu Asp Phe Ser Gly Asn
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Ala Leu Gly His Met Trp Ala Glu Gly Asp Leu Tyr Leu His Phe Phe
    610                 615                 620
Gln Gly Leu Ser Gly Leu Ile Trp Leu Asp Leu Ser Gln Asn Arg Leu
625                 630                 635                 640
His Thr Leu Leu Pro Gln Thr Leu Arg Asn Leu Pro Lys Ser Leu Gln
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Leu Lys Ala Leu Thr Asn Gly Ser Leu Pro Ala Gly Thr Arg Leu Arg
    690                 695                 700
Arg Leu Asp Val Ser Cys Asn Ser Ile Ser Phe Val Ala Pro Gly Phe
705                 710                 715                 720
Phe Ser Lys Ala Lys Glu Leu Arg Glu Leu Asn Leu Ser Ala Asn Ala
                725                 730                 735
Leu Lys Thr Val Asp His Ser Trp Phe Gly Pro Leu Ala Ser Ala Leu
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Gln Ile Leu Asp Val Ser Ala Asn Pro Leu His Cys Ala Cys Gly Ala
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Ala Phe Met Asp Phe Leu Leu Glu Val Gln Ala Ala Val Pro Gly Leu
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Ile Phe Ala Gln Asp Leu Arg Leu Cys Leu Asp Glu Ala Leu Ser Trp
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Asp Cys Phe Ala Leu Ser Leu Leu Ala Val Ala Leu Gly Leu Gly Val
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Pro Met Leu His His Leu Cys Gly Trp Asp Leu Trp Tyr Cys Phe His
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His Leu Ala Ser Ser Phe Lys Asn Leu Val Ser Leu Gln Glu Leu Asn
            20                  25                  30
Met Asn Gly Ile Phe Phe Arg Leu Leu Asn Lys Tyr Thr Leu Arg Trp
        35                  40                  45
Leu Ala Asp Leu Pro Lys Leu His Thr Leu His Leu Gln Met Asn Phe
    50                  55                  60
Ile Asn Gln Ala Gln Leu Ser Ile Phe Gly Thr Phe Arg Ala Leu Arg
65                  70                  75                  80
Phe Val Asp Leu Ser Asp Asn Arg Ile Ser Gly Pro Ser Thr Leu Ser
                85                  90                  95
Glu Ala Thr Pro Glu Glu Ala Asp Asp Ala Glu Gln Glu Glu Leu Leu
            100                 105                 110
Ser Ala Asp Pro His Pro Ala Pro Leu Ser Thr Pro Ala Ser Lys Asn
        115                 120                 125
Phe Met Asp Arg Cys Lys Asn Phe Lys Phe Asn Met Asp Leu Ser Arg
    130                 135                 140
Asn Asn Leu Val Thr Ile Thr Ala Glu Met Phe Val Asn Leu Ser Arg
145                 150                 155                 160
Leu Gln Cys Leu Ser Leu Ser His Asn Ser Ile Ala Gln Ala Val Asn
                165                 170                 175
Gly Ser
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<210> 9
<211> 497
<212> DNA
<213> Mus musculus

<400> 9
gtgggtttgg tgtctatctt cactctcctg aaagatgcat gggaagaaaa ctacccttta 60
cagccaacct ttgctccgtg ggcctggtgg cttggtagca tatattgcgc acttgccaaa 120
tagcggtgta gtaagacaga gcaaggcagg cagagcaact cgggaaccag acatgaagat 180
gcagctgttt ccagctgttg ctctgagcta ttctgctgta ggtccccggc agaagttctg 240
gttatagaag tggcggttgt ccctagtcag ggctgtactc agctgggccc agaagccccc 300
ctgcccgttg ggtcgctggg gccagaagag cacactctgg cggcagagac gctggcgcag 360
tcgcacatag cgggacggtn gggcatccgg acgcaggatc accaacacca ccacgtcctt 420
gcggtcttcc aacaggcgct gctgagccag caggaagctg gtgcgcagga ggccactgac 480
gcggtccgtg tgggcca 497

<210> 10
<211> 95
<212> PRT
<213> Mus musculus

<400> 10

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Ala His Thr Asp Arg Val Ser Gly Leu Leu Arg Thr Ser Phe Leu Leu
 1               5                  10                  15
Ala Gln Gln Arg Leu Leu Glu Asp Arg Lys Asp Val Val Val Leu Val
            20                  25                  30
Ile Leu Arg Pro Asp Ala Xaa Pro Ser Arg Tyr Val Arg Leu Arg Gln
        35                  40                  45
Arg Leu Cys Arg Gln Ser Val Leu Phe Trp Pro Gln Arg Pro Asn Gly
    50                  55                  60
Gln Gly Gly Phe Trp Ala Gln Leu Ser Thr Ala Leu Thr Arg Asp Asn
65                  70                  75                  80
Arg His Phe Tyr Asn Gln Asn Phe Cys Arg Gly Pro Thr Ala Glu
                85                  90                  95
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<210> 11
<211> 373
<212> DNA
<213> Mus musculus

<400> 11

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atgggagccg caagactcta tttgtgctgg cccacacgga ccgcgtcagt ggcctcctgc     120
gcaccagctt cctgctggct cagcagcgcc tgttggaaga ccgcaaggac gtggtggtgt     180
tggtgatcct gcgtccggat gcccaccgct cccgctatgt gcgactgcgc cagcgtctct     240
gccgccagag tgtgctcttc tggccccagc agcccaacgg gcaggggggc ttctgggccc     300
agctgagtac agccctgact agggacaacc gccacttcta taaccagaac ttctgccggg     360
gacctacagc aga                                                       373
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<210> 12
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<212> PRT
<213> Mus musculus

<400> 12

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Glu Asp Arg Asp Trp Leu Pro Gly Gln Thr Leu Phe Glu Asn Leu Trp
 1               5                  10                  15
Ala Ser Ile Tyr Gly Ser Arg Lys Thr Leu Phe Val Leu Ala His Thr
            20                  25                  30
Asp Arg Val Ser Gly Leu Leu Arg Thr Ser Phe Leu Leu Ala Gln Gln
        35                  40                  45
Arg Leu Leu Glu Asp Arg Lys Asp Val Val Val Leu Val Ile Leu Arg
    50                  55                  60
Pro Asp Ala His Arg Ser Arg Tyr Val Arg Leu Arg Gln Arg Leu Cys
65                  70                  75                  80
Arg Gln Ser Val Leu Phe Trp Pro Gln Gln Pro Asn Gly Gln Gly Gly
                85                  90                  95
Phe Trp Ala Gln Leu Ser Thr Ala Leu Thr Arg Asp Asn Arg His Phe
            100                 105                 110
Tyr Asn Gln Asn Phe Cys Arg Gly Pro Thr Ala
        115                 120
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<210> 13
<211> 489
<212> DNA
<213> Mus musculus

<400> 13

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```
atctgtccat gctacagagc cttagcctgg cacacaatga cattcatacc cgtgtgtcct     120
cacatctcaa cagcaactca gtgaggtttc ttgacttcag cggcaacggt atgggccgca     180
tgtgggatga ggggggcctt tatctccatt tcttccaagg cctgagtggc gtgctgaagc     240
tggacctgtc tcaaaataac ctgcatatcc tccggcccca gaaccttgac aacctcccca     300
agagcctgaa gctgctgagc ctccgagaca actacctatc tttctttaac tggaccagtc     360
tgtccttcct acccaacctg gaagtcctag acctggcagg caaccagcta aaggccctga     420
ccaatggcac cctgcctaat ggcaccctcc tccagaaact cgatgtcagt agcaacagta     480
tcgtctctg                                                            489
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<210> 14
<211> 162
<212> PRT
<213> Mus musculus

<400> 14

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Tyr Asn Ser Gln Pro Phe Ser Met Lys Gly Ile Gly His Asn Phe Ser
 1               5                  10                  15
Phe Val Thr His Leu Ser Met Leu Gln Ser Leu Ser Leu Ala His Asn
            20                  25                  30
Asp Ile His Thr Arg Val Ser Ser His Leu Asn Ser Asn Ser Val Arg
        35                  40                  45
Phe Leu Asp Phe Ser Gly Asn Gly Met Gly Arg Met Trp Asp Glu Gly
    50                  55                  60
Gly Leu Tyr Leu His Phe Phe Gln Gly Leu Ser Gly Val Leu Lys Leu
65                  70                  75                  80
Asp Leu Ser Gln Asn Asn Leu His Ile Leu Arg Pro Gln Asn Leu Asp
                85                  90                  95
Asn Leu Pro Lys Ser Leu Lys Leu Leu Ser Leu Arg Asp Asn Tyr Leu
            100                 105                 110
Ser Phe Phe Asn Trp Thr Ser Leu Ser Phe Leu Pro Asn Leu Glu Val
        115                 120                 125
Leu Asp Leu Ala Gly Asn Gln Leu Lys Ala Leu Thr Asn Gly Thr Leu
    130                 135                 140
Pro Asn Gly Thr Leu Leu Gln Lys Leu Asp Val Ser Ser Asn Ser Ile
145                 150                 155                 160
Val Ser
```

<210> 15
<211> 462
<212> DNA
<213> Mus musculus

<400> 15

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gcggccgcgc cgctcctcca gccgcacccg cagctcgtta tacacccagt cggcaactgc      60
gctctgtgcc ttatcgaaca ccacgaaggc atcataaggg agagtttggg cgctgcgtcg     120
gctgcgggct agcaaaggta gccatgccag gcacagatga aaacagtacc agacgtccca     180
gccgcagaga tggtgcagta taggcaccac catgcccacg gccacagcca agagtgaaag     240
gccaaagcag tcccaagaga ggacctcatc caggcacagc cgcaggtcct gcgcgaagat     300
gctacggccc tgcagctggc cggggctgcc acacttcaca ccattagcca ggccaggcac     360
cttggtctgc acctccaaca gtaagtctac gaaggctgcc ccacaggcac agtgcagagg     420
gttgcttctc acgtctagaa ctgtcaggtt catcacaatg gg                        462
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<210> 16
<211> 154
<212> PRT
<213> Mus musculus

<400> 16

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Pro Ile Val Met Asn Leu Thr Val Leu Asp Val Arg Ser Asn Pro Leu
 1               5                  10                  15
His Cys Ala Cys Gly Ala Ala Phe Val Asp Leu Leu Leu Glu Val Gln
            20                  25                  30
Thr Lys Val Pro Gly Leu Ala Asn Gly Val Lys Cys Gly Ser Pro Gly
        35                  40                  45
Gln Leu Gln Gly Arg Ser Ile Phe Ala Gln Asp Leu Arg Leu Cys Leu
    50                  55                  60
Asp Glu Val Leu Ser Trp Asp Cys Phe Gly Leu Ser Leu Leu Ala Val
65                  70                  75                  80
Ala Val Gly Met Val Val Pro Ile Leu His His Leu Cys Gly Trp Asp
                85                  90                  95
Val Trp Tyr Cys Phe His Leu Cys Leu Ala Trp Leu Pro Leu Leu Ala
            100                 105                 110
Arg Ser Arg Arg Ser Ala Gln Thr Leu Pro Tyr Asp Ala Phe Val Val
        115                 120                 125
Phe Asp Lys Ala Gln Ser Ala Val Ala Asp Trp Val Tyr Asn Glu Leu
    130                 135                 140
Arg Val Arg Leu Glu Glu Arg Arg Gly Arg
145                 150
```

<210> 17
<211> 17
<212> PRT
<213> Mus musculus

<400> 17

```
Cys Asp Leu Ser Asp Asn Arg Ile Ser Gly Pro Ser Thr Leu Ser Glu
 1               5                  10                  15
Ala
```

<210> 18
<211> 14
<212> PRT
<213> Mus musculus

<400> 18

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His Phe Tyr Asn Gln Asn Phe Cys Arg Gly Pro Thr Ala Glu
 1               5                  10
```

<210> 19
<211> 16
<212> PRT
<213> Homo sapiens

<400> 19

```
Pro Ala Pro Val Asp Thr Pro Ser Ser Glu Asp Phe Arg Pro Asn Cys
 1               5                  10                  15
```

<210> 20
<211> 14
<212> PRT
<213> Homo sapiens

<400> 20

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His Phe Tyr Asn Arg Asn Phe Cys Gln Gly Pro Thr Ala Glu
 1               5                  10
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<210> 21
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<220>
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<400> 21
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<210> 22
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<220>
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<400> 22
aagcgaaaat gaaattgact 20

<210> 23
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<220>
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<400> 23
accatggacg aactgtttcc cctc 24

<210> 24
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accatggacg acctgtttcc cctc 24

<210> 25
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accatggacg agctgtttcc cctc 24

<210> 26
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accatggacg atctgtttcc cctc 24

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accatggacg gtctgtttcc cctc 24

<210> 28
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<210> 29
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<400> 29
accatggacg ttctgtttcc cctc 24

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<400> 30
agatttctag gaattcaatc 20

<210> 31
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agcgggggcg agcgggggcg 20

<210> 32
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<400> 32
agctatgacg ttccaagg 18

<210> 33
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<400> 33
atcgactctc gagcgttctc 20

<210> 34
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atgacgttcc tgacgtt 17

<210> 35
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<210> 39
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<400> 39
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<210> 40
<211> 15
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<400> 40
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<210> 41
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<400> 41
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<210> 42
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<400> 42
ccaacgtt 8

<210> 43
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<210> 44
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<400> 44
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<210> 45
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<400> 45
ctgctgagac tggag 15

<210> 46
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<210> 47
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<210> 49
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<210> 53
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<400> 53
gcatgacgtt gagct 15

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<210> 55
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<210> 56
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<400> 56
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<210> 57
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<400> 57
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<210> 58
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<400> 58
gctagatgtt agcgt 15

<210> 59
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<210> 60
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<400> 60
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<210> 61
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<400> 61
ggggtcaacg ttgacgggg 19

<210> 62
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<400> 62
ggggtcagtc ttgacgggg 19

<210> 63
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<400> 63
gtatttccca gaaaaggaac 20

<210> 64
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<210> 66
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<400> 66
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<210> 67
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<400> 67
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<210> 69
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<400> 69
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<210> 70
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<400> 70
tcaacgtt 8

<210> 71
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<400> 71
tcaagctt 8

<210> 72
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<400> 72
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<210> 73
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<400> 73
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<210> 74
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<400> 74
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<210> 75
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<210> 76
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<210> 77
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<210> 78
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<210> 82
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<210> 83
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<210> 84
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<210> 85
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<210> 87
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<400> 87
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<210> 88
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tccatgcgtt gcgttgcgtt 20

<210> 89
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<400> 89
tccatgctgg tcctgatgct 20

<210> 90
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<210> 91
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<210> 92
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<400> 93
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<210> 94
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<210> 95
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<400> 95
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<210> 96

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tccatgtcgt tcctgatgct 20

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<210> 99
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<400> 99
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<210> 100
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<400> 100
tcctgtcgtt cctgtcgtt 19

<210> 101
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<400> 101
tcctgtcgtt ccttgtcgtt 20

<210> 102
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<400> 102
tcctgtcgtt ttttgtcgtt 20

<210> 103
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<210> 104
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<210> 105
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<210> 106
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tcgtcgctgt ctccgcttct tcttgcc 27

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<400> 108
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<400> 109
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<400> 111
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<210> 112
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<400> 113
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<210> 115
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<400> 115
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<400> 124
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<212> PRT
<213> Unknown

<220>
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Xaa Xaa Xaa Xaa Xaa Xaa Arg Ser Xaa Xaa Xaa Xaa Xaa Xaa Tyr
20 25 30

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<211> 31
<212> PRT
<213> Homo sapiens

<220>
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Xaa Xaa Xaa Xaa Xaa Xaa Arg Leu Xaa Xaa Xaa Xaa Xaa Xaa Tyr
20 25 30

<210> 127
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<212> PRT
<213> Mus musculus

<220>
<223> unknown

<400> 127
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1 5 10 15
Xaa Xaa Xaa Xaa Xaa Xaa Gln Leu Xaa Xaa Xaa Xaa Xaa Xaa Tyr
20 25 30

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<220>
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<400> 129
gacgtt 6

<210> 130
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<220>
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<210> 131
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<220>
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<400> 131
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<210> 135
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<210> 137
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tccatgacgt ccttgatgtt 20

<210> 139
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tccatgacgt cattgatgtt 20

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<400> 140
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<210> 145
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<220>
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<210> 146
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<212> PRT
<213> Homo sapiens

<400> 146
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1 5 10 15
His Phe Pro Gln
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<210> 147
<211> 20

<212> PRT
<213> Unknown

<220>
<223> Mutated from human

<400> 147
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1 5 10 15
Lys Ser Leu His
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<210> 148
<211> 20
<212> PRT
<213> Mus musculus

<400> 148
Cys Arg Arg Cys Asp His Ala Pro Asn Pro Cys Met Ile Cys Gly Gln
1 5 10 15
Lys Ser Leu His
20

<210> 149
<211> 20
<212> PRT
<213> Unknown

<220>
<223> Mutated from mouse

<400> 149
Cys Arg Arg Cys Asp His Ala Pro Asn Pro Cys Met Ile Cys Pro Arg
1 5 10 15
His Phe Pro Gln
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<220>
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<400> 158
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<210> 159
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<400> 159
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<400> 160
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<210> 161
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<400> 161
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<220>
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<400> 165
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<210> 166
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<220>
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<400> 166
cacctctcat gctctgctct cttc 24

<210> 167
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<220>
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<400> 167
gctagaccgt ttccttgaac acctg 25

<210> 168

<211> 3373
<212> DNA
<213> Homo sapiens

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<222> (0)...(0)
<223> Human TLR7 cDNA

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<212> DNA
<213> Homo sapiens

<220>
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<400> 170

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Thr Leu Pro Cys Asp Val Thr Leu Asp Val Pro Lys Asn His Val Ile
        35                  40                  45
Val Asp Cys Thr Asp Lys His Leu Thr Glu Ile Pro Gly Gly Ile Pro
    50                  55                  60
Thr Asn Thr Thr Asn Leu Thr Leu Thr Ile Asn His Ile Pro Asp Ile
65                  70                  75                  80
Ser Pro Ala Ser Phe His Arg Leu Asp His Leu Val Glu Ile Asp Phe
                85                  90                  95
Arg Cys Asn Cys Val Pro Ile Pro Leu Gly Ser Lys Asn Asn Met Cys
            100                 105                 110
Ile Lys Arg Leu Gln Ile Lys Pro Arg Ser Phe Ser Gly Leu Thr Tyr
        115                 120                 125
Leu Lys Ser Leu Tyr Leu Asp Gly Asn Gln Leu Leu Glu Ile Pro Gln
    130                 135                 140
Gly Leu Pro Pro Ser Leu Gln Leu Leu Ser Leu Glu Ala Asn Asn Ile
145                 150                 155                 160
Phe Ser Ile Arg Lys Glu Asn Leu Thr Glu Leu Ala Asn Ile Glu Ile
                165                 170                 175
Leu Tyr Leu Gly Gln Asn Cys Tyr Tyr Arg Asn Pro Cys Tyr Val Ser
            180                 185                 190
Tyr Ser Ile Glu Lys Asp Ala Phe Leu Asn Leu Thr Lys Leu Lys Val
        195                 200                 205
Leu Ser Leu Lys Asp Asn Asn Val Thr Ala Val Pro Thr Val Leu Pro
    210                 215                 220
Ser Thr Leu Thr Glu Leu Tyr Leu Tyr Asn Asn Met Ile Ala Lys Ile
225                 230                 235                 240
Gln Glu Asp Asp Phe Asn Asn Leu Asn Gln Leu Gln Ile Leu Asp Leu
                245                 250                 255
Ser Gly Asn Cys Pro Arg Cys Tyr Asn Ala Pro Phe Pro Cys Ala Pro
            260                 265                 270
Cys Lys Asn Asn Ser Pro Leu Gln Ile Pro Val Asn Ala Phe Asp Ala
        275                 280                 285
Leu Thr Glu Leu Lys Val Leu Arg Leu His Ser Asn Ser Leu Gln His
    290                 295                 300
```

```
Val Pro Pro Arg Trp Phe Lys Asn Ile Asn Lys Leu Gln Glu Leu Asp
305                 310                 315                 320
Leu Ser Gln Asn Phe Leu Ala Lys Glu Ile Gly Asp Ala Lys Phe Leu
                325                 330                 335
His Phe Leu Pro Ser Leu Ile Gln Leu Asp Leu Ser Phe Asn Phe Glu
            340                 345                 350
Leu Gln Val Tyr Arg Ala Ser Met Asn Leu Ser Gln Ala Phe Ser Ser
        355                 360                 365
Leu Lys Ser Leu Lys Ile Leu Arg Ile Arg Gly Tyr Val Phe Lys Glu
    370                 375                 380
Leu Lys Ser Phe Asn Leu Ser Pro Leu His Asn Leu Gln Asn Leu Glu
385                 390                 395                 400
Val Leu Asp Leu Gly Thr Asn Phe Ile Lys Ile Ala Asn Leu Ser Met
                405                 410                 415
Phe Lys Gln Phe Lys Arg Leu Lys Val Ile Asp Leu Ser Val Asn Lys
            420                 425                 430
Ile Ser Pro Ser Gly Asp Ser Ser Glu Val Gly Phe Cys Ser Asn Ala
        435                 440                 445
Arg Thr Ser Val Glu Ser Tyr Glu Pro Gln Val Leu Glu Gln Leu His
    450                 455                 460
Tyr Phe Arg Tyr Asp Lys Tyr Ala Arg Ser Cys Arg Phe Lys Asn Lys
465                 470                 475                 480
Glu Ala Ser Phe Met Ser Val Asn Glu Ser Cys Tyr Lys Tyr Gly Gln
                485                 490                 495
Thr Leu Asp Leu Ser Lys Asn Ser Ile Phe Phe Val Lys Ser Ser Asp
            500                 505                 510
Phe Gln His Leu Ser Phe Leu Lys Cys Leu Asn Leu Ser Gly Asn Leu
        515                 520                 525
Ile Ser Gln Thr Leu Asn Gly Ser Glu Phe Gln Pro Leu Ala Glu Leu
    530                 535                 540
Arg Tyr Leu Asp Phe Ser Asn Asn Arg Leu Asp Leu Leu His Ser Thr
545                 550                 555                 560
Ala Phe Glu Glu Leu His Lys Leu Glu Val Leu Asp Ile Ser Ser Asn
                565                 570                 575
Ser His Tyr Phe Gln Ser Glu Gly Ile Thr His Met Leu Asn Phe Thr
            580                 585                 590
Lys Asn Leu Lys Val Leu Gln Lys Leu Met Met Asn Asp Asn Asp Ile
        595                 600                 605
Ser Ser Ser Thr Ser Arg Thr Met Glu Ser Glu Ser Leu Arg Thr Leu
    610                 615                 620
Glu Phe Arg Gly Asn His Leu Asp Val Leu Trp Arg Glu Gly Asp Asn
625                 630                 635                 640
Arg Tyr Leu Gln Leu Phe Lys Asn Leu Leu Lys Leu Glu Glu Leu Asp
                645                 650                 655
Ile Ser Lys Asn Ser Leu Ser Phe Leu Pro Ser Gly Val Phe Asp Gly
            660                 665                 670
Met Pro Pro Asn Leu Lys Asn Leu Ser Leu Ala Lys Asn Gly Leu Lys
        675                 680                 685
Ser Phe Ser Trp Lys Lys Leu Gln Cys Leu Lys Asn Leu Glu Thr Leu
    690                 695                 700
Asp Leu Ser His Asn Gln Leu Thr Thr Val Pro Glu Arg Leu Ser Asn
705                 710                 715                 720
Cys Ser Arg Ser Leu Lys Asn Leu Ile Leu Lys Asn Asn Gln Ile Arg
                725                 730                 735
Ser Leu Thr Lys Tyr Phe Leu Gln Asp Ala Phe Gln Leu Arg Tyr Leu
            740                 745                 750
Asp Leu Ser Ser Asn Lys Ile Gln Met Ile Gln Lys Thr Ser Phe Pro
        755                 760                 765
Glu Asn Val Leu Asn Asn Leu Lys Met Leu Leu Leu His His Asn Arg
```

```
    770                 775                 780
Phe Leu Cys Thr Cys Asp Ala Val Trp Phe Val Trp Trp Val Asn His
785                 790                 795                 800
Thr Glu Val Thr Ile Pro Tyr Leu Ala Thr Asp Val Thr Cys Val Gly
                805                 810                 815
Pro Gly Ala His Lys Gly Gln Ser Val Ile Ser Leu Asp Leu Tyr Thr
            820                 825                 830
Cys Glu Leu Asp Leu Thr Asn Leu Ile Leu Phe Ser Leu Ser Ile Ser
        835                 840                 845
Val Ser Leu Phe Leu Met Val Met Met Thr Ala Ser His Leu Tyr Phe
    850                 855                 860
Trp Asp Val Trp Tyr Ile Tyr His Phe Cys Lys Ala Lys Ile Lys Gly
865                 870                 875                 880
Tyr Gln Arg Leu Ile Ser Pro Asp Cys Cys Tyr Asp Ala Phe Ile Val
                885                 890                 895
Tyr Asp Thr Lys Asp Pro Ala Val Thr Glu Trp Val Leu Ala Glu Leu
            900                 905                 910
Val Ala Lys Leu Glu Asp Pro Arg Glu Lys His Phe Asn Leu Cys Leu
        915                 920                 925
Glu Glu Arg Asp Trp Leu Pro Gly Gln Pro Val Leu Glu Asn Leu Ser
    930                 935                 940
Gln Ser Ile Gln Leu Ser Lys Lys Thr Val Phe Val Met Thr Asp Lys
945                 950                 955                 960
Tyr Ala Lys Thr Glu Asn Phe Lys Ile Ala Phe Tyr Leu Ser His Gln
                965                 970                 975
Arg Leu Met Asp Glu Lys Val Asp Val Ile Ile Leu Ile Phe Leu Glu
            980                 985                 990
Lys Pro Phe Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys Arg Leu Cys
        995                 1000                1005
Gly Ser Ser Val Leu Glu Trp Pro Thr Asn Pro Gln Ala His Pro Tyr
    1010                1015                1020
Phe Trp Gln Cys Leu Lys Asn Ala Leu Ala Thr Asp Asn His Val Ala
1025                1030                1035                1040
Tyr Ser Gln Val Phe Lys Glu Thr Val
                1045
```

<210> 171
<211> 989
<212> PRT
<213> Homo sapiens

<400> 171

```
Met Val Phe Pro Met Trp Thr Leu Lys Arg Gln Ile Leu Ile Leu Phe
 1               5                  10                  15
Asn Ile Ile Leu Ile Ser Lys Leu Leu Gly Ala Arg Trp Phe Pro Lys
            20                  25                  30
Thr Leu Pro Cys Asp Val Thr Leu Asp Val Pro Lys Asn His Val Ile
        35                  40                  45
Val Asp Cys Thr Asp Lys His Leu Thr Glu Ile Pro Gly Gly Ile Pro
    50                  55                  60
Thr Asn Thr Thr Asn Leu Thr Leu Thr Ile Asn His Ile Pro Asp Ile
65                  70                  75                  80
Ser Pro Ala Ser Phe His Arg Leu Asp His Leu Val Glu Ile Asp Phe
                85                  90                  95
Arg Cys Asn Cys Val Pro Ile Pro Leu Gly Ser Lys Asn Asn Met Cys
            100                 105                 110
Ile Lys Arg Leu Gln Ile Lys Pro Arg Ser Phe Ser Gly Leu Thr Tyr
        115                 120                 125
Leu Lys Ser Leu Tyr Leu Asp Gly Asn Gln Leu Leu Glu Ile Pro Gln
```

```
    130                 135                 140
Gly Leu Pro Pro Ser Leu Gln Leu Leu Ser Leu Glu Ala Asn Asn Ile
145                 150                 155                 160
Phe Ser Ile Arg Lys Glu Asn Leu Thr Glu Leu Ala Asn Ile Glu Ile
                165                 170                 175
Leu Tyr Leu Gly Gln Asn Cys Tyr Tyr Arg Asn Pro Cys Tyr Val Ser
            180                 185                 190
Tyr Ser Ile Glu Lys Asp Ala Phe Leu Asn Leu Thr Lys Leu Lys Val
        195                 200                 205
Leu Ser Leu Lys Asp Asn Asn Val Thr Ala Val Pro Thr Val Leu Pro
    210                 215                 220
Ser Thr Leu Thr Glu Leu Tyr Leu Tyr Asn Asn Met Ile Ala Lys Ile
225                 230                 235                 240
Gln Glu Asp Asp Phe Asn Asn Leu Asn Gln Leu Gln Ile Leu Asp Leu
                245                 250                 255
Ser Gly Asn Cys Pro Arg Cys Tyr Asn Ala Pro Phe Pro Cys Ala Pro
            260                 265                 270
Cys Lys Asn Asn Ser Pro Leu Gln Ile Pro Val Asn Ala Phe Asp Ala
        275                 280                 285
Leu Thr Glu Leu Lys Val Leu Arg Leu His Ser Asn Ser Leu Gln His
    290                 295                 300
Val Pro Pro Arg Trp Phe Lys Asn Ile Asn Lys Leu Gln Glu Leu Asp
305                 310                 315                 320
Leu Ser Gln Asn Phe Leu Ala Lys Glu Ile Gly Asp Ala Lys Phe Leu
                325                 330                 335
His Phe Leu Pro Ser Leu Ile Gln Leu Asp Leu Ser Phe Asn Phe Glu
            340                 345                 350
Leu Gln Val Tyr Arg Ala Ser Met Asn Leu Ser Gln Ala Phe Ser Ser
        355                 360                 365
Leu Lys Ser Leu Lys Ile Leu Arg Ile Arg Gly Tyr Val Phe Lys Glu
    370                 375                 380
Leu Lys Ser Phe Asn Leu Ser Pro Leu His Asn Leu Gln Asn Leu Glu
385                 390                 395                 400
Val Leu Asp Leu Gly Thr Asn Phe Ile Lys Ile Ala Asn Leu Ser Met
                405                 410                 415
Phe Lys Gln Phe Lys Arg Leu Lys Val Ile Asp Leu Ser Val Asn Lys
            420                 425                 430
Ile Ser Pro Ser Gly Asp Ser Ser Glu Val Gly Phe Cys Ser Asn Ala
        435                 440                 445
Arg Thr Ser Val Glu Ser Tyr Glu Pro Gln Val Leu Glu Gln Leu His
    450                 455                 460
Tyr Phe Arg Tyr Asp Lys Tyr Ala Arg Ser Cys Arg Phe Lys Asn Lys
465                 470                 475                 480
Glu Ala Ser Phe Met Ser Val Asn Glu Ser Cys Tyr Lys Tyr Gly Gln
                485                 490                 495
Thr Leu Asp Leu Ser Lys Asn Ser Ile Phe Phe Val Lys Ser Ser Asp
            500                 505                 510
Phe Gln His Leu Ser Phe Leu Lys Cys Leu Asn Leu Ser Gly Asn Leu
        515                 520                 525
Ile Ser Gln Thr Leu Asn Gly Ser Glu Phe Gln Pro Leu Met Met Asn
    530                 535                 540
Asp Asn Asp Ile Ser Ser Ser Thr Ser Arg Thr Met Glu Ser Glu Ser
545                 550                 555                 560
Leu Arg Thr Leu Glu Phe Arg Gly Asn His Leu Asp Val Leu Trp Arg
                565                 570                 575
Glu Gly Asp Asn Arg Tyr Leu Gln Leu Phe Lys Asn Leu Leu Lys Leu
            580                 585                 590
Glu Glu Leu Asp Ile Ser Lys Asn Ser Leu Ser Phe Leu Pro Ser Gly
        595                 600                 605
```

```
Val Phe Asp Gly Met Pro Pro Asn Leu Lys Asn Leu Ser Leu Ala Lys
    610                 615                 620
Asn Gly Leu Lys Ser Phe Ser Trp Lys Lys Leu Gln Cys Leu Lys Asn
625                 630                 635                 640
Leu Glu Thr Leu Asp Leu Ser His Asn Gln Leu Thr Thr Val Pro Glu
                645                 650                 655
Arg Leu Ser Asn Cys Ser Arg Ser Leu Lys Asn Leu Ile Leu Lys Asn
            660                 665                 670
Asn Gln Ile Arg Ser Leu Thr Lys Tyr Phe Leu Gln Asp Ala Phe Gln
        675                 680                 685
Leu Arg Tyr Leu Asp Leu Ser Ser Asn Lys Ile Gln Met Ile Gln Lys
    690                 695                 700
Thr Ser Phe Pro Glu Asn Val Leu Asn Asn Leu Lys Met Leu Leu Leu
705                 710                 715                 720
His His Asn Arg Phe Leu Cys Thr Cys Asp Ala Val Trp Phe Val Trp
                725                 730                 735
Trp Val Asn His Thr Glu Val Thr Ile Pro Tyr Leu Ala Thr Asp Val
            740                 745                 750
Thr Cys Val Gly Pro Gly Ala His Lys Gly Gln Ser Val Ile Ser Leu
        755                 760                 765
Asp Leu Tyr Thr Cys Glu Leu Asp Leu Thr Asn Leu Ile Leu Phe Ser
    770                 775                 780
Leu Ser Ile Ser Val Ser Leu Phe Leu Met Val Met Met Thr Ala Ser
785                 790                 795                 800
His Leu Tyr Phe Trp Asp Val Trp Tyr Ile Tyr His Phe Cys Lys Ala
                805                 810                 815
Lys Ile Lys Gly Tyr Gln Arg Leu Ile Ser Pro Asp Cys Cys Tyr Asp
            820                 825                 830
Ala Phe Ile Val Tyr Asp Thr Lys Asp Pro Ala Val Thr Glu Trp Val
        835                 840                 845
Leu Ala Glu Leu Val Ala Lys Leu Glu Asp Pro Arg Glu Lys His Phe
    850                 855                 860
Asn Leu Cys Leu Glu Glu Arg Asp Trp Leu Pro Gly Gln Pro Val Leu
865                 870                 875                 880
Glu Asn Leu Ser Gln Ser Ile Gln Leu Ser Lys Lys Thr Val Phe Val
                885                 890                 895
Met Thr Asp Lys Tyr Ala Lys Thr Glu Asn Phe Lys Ile Ala Phe Tyr
            900                 905                 910
Leu Ser His Gln Arg Leu Met Asp Glu Lys Val Asp Val Ile Ile Leu
        915                 920                 925
Ile Phe Leu Glu Lys Pro Phe Gln Lys Ser Lys Phe Leu Gln Leu Arg
    930                 935                 940
Lys Arg Leu Cys Gly Ser Ser Val Leu Glu Trp Pro Thr Asn Pro Gln
945                 950                 955                 960
Ala His Pro Tyr Phe Trp Gln Cys Leu Lys Asn Ala Leu Ala Thr Asp
                965                 970                 975
Asn His Val Ala Tyr Ser Gln Val Phe Lys Glu Thr Val
            980                 985
```

<210> 172
<211> 1049
<212> PRT
<213> Homo sapiens

<400> 172

```
Met Val Phe Pro Met Trp Thr Leu Lys Arg Gln Ile Leu Ile Leu Phe
 1               5                  10                  15
Asn Ile Ile Leu Ile Ser Lys Leu Leu Gly Ala Arg Trp Phe Pro Lys
            20                  25                  30
```

```
Thr Leu Pro Cys Asp Val Thr Leu Asp Val Pro Lys Asn His Val Ile
        35                  40                  45
Val Asp Cys Thr Asp Lys His Leu Thr Glu Ile Pro Gly Gly Ile Pro
    50                  55                  60
Thr Asn Thr Thr Asn Leu Thr Leu Thr Ile Asn His Ile Pro Asp Ile
65                  70                  75                  80
Ser Pro Ala Ser Phe His Arg Leu Asp His Leu Val Glu Ile Asp Phe
                85                  90                  95
Arg Cys Asn Cys Val Pro Ile Pro Leu Gly Ser Lys Asn Asn Met Cys
            100                 105                 110
Ile Lys Arg Leu Gln Ile Lys Pro Arg Ser Phe Ser Gly Leu Thr Tyr
        115                 120                 125
Leu Lys Ser Leu Tyr Leu Asp Gly Asn Gln Leu Leu Glu Ile Pro Gln
    130                 135                 140
Gly Leu Pro Pro Ser Leu Gln Leu Leu Ser Leu Glu Ala Asn Asn Ile
145                 150                 155                 160
Phe Ser Ile Arg Lys Glu Asn Leu Thr Glu Leu Ala Asn Ile Glu Ile
                165                 170                 175
Leu Tyr Leu Gly Gln Asn Cys Tyr Tyr Arg Asn Pro Cys Tyr Val Ser
            180                 185                 190
Tyr Ser Ile Glu Lys Asp Ala Phe Leu Asn Leu Thr Lys Leu Lys Val
        195                 200                 205
Leu Ser Leu Lys Asp Asn Asn Val Thr Ala Val Pro Thr Val Leu Pro
    210                 215                 220
Ser Thr Leu Thr Glu Leu Tyr Leu Tyr Asn Asn Met Ile Ala Lys Ile
225                 230                 235                 240
Gln Glu Asp Asp Phe Asn Asn Leu Asn Gln Leu Gln Ile Leu Asp Leu
                245                 250                 255
Ser Gly Asn Cys Pro Arg Cys Tyr Asn Ala Pro Phe Pro Cys Ala Pro
            260                 265                 270
Cys Lys Asn Asn Ser Pro Leu Gln Ile Pro Val Asn Ala Phe Asp Ala
        275                 280                 285
Leu Thr Glu Leu Lys Val Leu Arg Leu His Ser Asn Ser Leu Gln His
    290                 295                 300
Val Pro Pro Arg Trp Phe Lys Asn Ile Asn Lys Leu Gln Glu Leu Asp
305                 310                 315                 320
Leu Ser Gln Asn Phe Leu Ala Lys Glu Ile Gly Asp Ala Lys Phe Leu
                325                 330                 335
His Phe Leu Pro Ser Leu Ile Gln Leu Asp Leu Ser Phe Asn Phe Glu
            340                 345                 350
Leu Gln Val Tyr Arg Ala Ser Met Asn Leu Ser Gln Ala Phe Ser Ser
        355                 360                 365
Leu Lys Ser Leu Lys Ile Leu Arg Ile Arg Gly Tyr Val Phe Lys Glu
    370                 375                 380
Leu Lys Ser Phe Asn Leu Ser Pro Leu His Asn Leu Gln Asn Leu Glu
385                 390                 395                 400
Val Leu Asp Leu Gly Thr Asn Phe Ile Lys Ile Ala Asn Leu Ser Met
                405                 410                 415
Phe Lys Gln Phe Lys Arg Leu Lys Val Ile Asp Leu Ser Val Asn Lys
            420                 425                 430
Ile Ser Pro Ser Gly Asp Ser Ser Glu Val Gly Phe Cys Ser Asn Ala
        435                 440                 445
Arg Thr Ser Val Glu Ser Tyr Glu Pro Gln Val Leu Glu Gln Leu His
    450                 455                 460
Tyr Phe Arg Tyr Asp Lys Tyr Ala Arg Ser Cys Arg Phe Lys Asn Lys
465                 470                 475                 480
Glu Ala Ser Phe Met Ser Val Asn Glu Ser Cys Tyr Lys Tyr Gly Gln
                485                 490                 495
Thr Leu Asp Leu Ser Lys Asn Ser Ile Phe Phe Val Lys Ser Ser Asp
```

```
                500                 505                 510
Phe Gln His Leu Ser Phe Leu Lys Cys Leu Asn Leu Ser Gly Asn Leu
        515                 520                 525
Ile Ser Gln Thr Leu Asn Gly Ser Glu Phe Gln Pro Leu Ala Glu Leu
    530                 535                 540
Arg Tyr Leu Asp Phe Ser Asn Asn Arg Leu Asp Leu Leu His Ser Thr
545                 550                 555                 560
Ala Phe Glu Glu Leu His Lys Leu Glu Val Leu Asp Ile Ser Ser Asn
                565                 570                 575
Ser His Tyr Phe Gln Ser Glu Gly Ile Thr His Met Leu Asn Phe Thr
            580                 585                 590
Lys Asn Leu Lys Val Leu Gln Lys Leu Met Met Asn Asp Asn Asp Ile
        595                 600                 605
Ser Ser Ser Thr Ser Arg Thr Met Glu Ser Glu Ser Leu Arg Thr Leu
    610                 615                 620
Glu Phe Arg Gly Asn His Leu Asp Val Leu Trp Arg Glu Gly Asp Asn
625                 630                 635                 640
Arg Tyr Leu Gln Leu Phe Lys Asn Leu Leu Lys Leu Glu Glu Leu Asp
                645                 650                 655
Ile Ser Lys Asn Ser Leu Ser Phe Leu Pro Ser Gly Val Phe Asp Gly
            660                 665                 670
Met Pro Pro Asn Leu Lys Asn Leu Ser Leu Ala Lys Asn Gly Leu Lys
        675                 680                 685
Ser Phe Ser Trp Lys Lys Leu Gln Cys Leu Lys Asn Leu Glu Thr Leu
    690                 695                 700
Asp Leu Ser His Asn Gln Leu Thr Thr Val Pro Glu Arg Leu Ser Asn
705                 710                 715                 720
Cys Ser Arg Ser His Lys Asn Leu Ile Leu Lys Asn Asn Gln Ile Arg
                725                 730                 735
Ser Pro Thr Lys Tyr Phe Leu Gln Asp Ala Phe Gln Leu Arg Tyr Leu
            740                 745                 750
Asp Leu Ser Ser Asn Lys Ile Gln Met Ile Gln Lys Thr Ser Phe Pro
        755                 760                 765
Glu Asn Val Leu Asn Asn Leu Lys Met Leu Leu Leu His His Asn Arg
    770                 775                 780
Phe Leu Cys Thr Cys Asp Ala Val Trp Phe Val Trp Trp Val Asn His
785                 790                 795                 800
Thr Glu Val Thr Ile Pro Tyr Leu Ala Thr Asp Val Thr Cys Val Gly
                805                 810                 815
Pro Gly Ala His Lys Gly Gln Ser Val Ile Ser Leu Asp Leu Tyr Thr
            820                 825                 830
Cys Glu Leu Asp Leu Thr Asn Leu Ile Leu Phe Ser Leu Ser Ile Ser
        835                 840                 845
Val Ser Leu Phe Leu Met Val Met Met Thr Ala Ser His Leu Tyr Phe
    850                 855                 860
Trp Asp Val Trp Tyr Ile Tyr His Phe Cys Lys Ala Lys Ile Lys Gly
865                 870                 875                 880
Tyr Gln Arg Leu Ile Ser Pro Asp Cys Cys Tyr Asp Ala Phe Ile Val
                885                 890                 895
Tyr Asp Thr Lys Asp Pro Ala Val Thr Glu Trp Val Leu Ala Glu Leu
            900                 905                 910
Val Ala Lys Leu Glu Asp Pro Arg Glu Lys His Phe Asn Leu Cys Leu
        915                 920                 925
Glu Glu Arg Asp Trp Leu Pro Gly Gln Pro Val Leu Glu Asn Leu Ser
    930                 935                 940
Gln Ser Ile Gln Leu Ser Lys Lys Thr Val Phe Val Met Thr Asp Lys
945                 950                 955                 960
Tyr Ala Lys Thr Glu Asn Phe Lys Ile Ala Phe Tyr Leu Ser His Gln
                965                 970                 975
```

```
Pro Asn Leu Leu Glu Leu Tyr Leu Tyr Asn Asn Ile Ile Lys Lys Ile
225                 230                 235                 240
Gln Glu Asn Asp Phe Asn Asn Leu Asn Glu Leu Gln Val Leu Asp Leu
                245                 250                 255
Ser Gly Asn Cys Pro Arg Cys Tyr Asn Val Pro Tyr Pro Cys Thr Pro
            260                 265                 270
Cys Glu Asn Asn Ser Pro Leu Gln Ile His Asp Asn Ala Phe Asn Ser
        275                 280                 285
Leu Thr Glu Leu Lys Val Leu Arg Leu His Ser Asn Ser Leu Gln His
    290                 295                 300
Val Pro Pro Thr Trp Phe Lys Asn Met Arg Asn Leu Gln Glu Leu Asp
305                 310                 315                 320
Leu Ser Gln Asn Tyr Leu Ala Arg Glu Ile Glu Glu Ala Lys Phe Leu
                325                 330                 335
His Phe Leu Pro Asn Leu Val Glu Leu Asp Phe Ser Phe Asn Tyr Glu
            340                 345                 350
Leu Gln Val Tyr His Ala Ser Ile Thr Leu Pro His Ser Leu Ser Ser
        355                 360                 365
Leu Glu Asn Leu Lys Ile Leu Arg Val Lys Gly Tyr Val Phe Lys Glu
    370                 375                 380
Leu Lys Asn Ser Ser Leu Ser Val Leu His Lys Leu Pro Arg Leu Glu
385                 390                 395                 400
Val Leu Asp Leu Gly Thr Asn Phe Ile Lys Ile Ala Asp Leu Asn Ile
                405                 410                 415
Phe Lys His Phe Glu Asn Leu Lys Leu Ile Asp Leu Ser Val Asn Lys
            420                 425                 430
Ile Ser Pro Ser Glu Glu Ser Arg Glu Val Gly Phe Cys Pro Asn Ala
        435                 440                 445
Gln Thr Ser Val Asp Arg His Gly Pro Gln Val Leu Glu Ala Leu His
    450                 455                 460
Tyr Phe Arg Tyr Asp Glu Tyr Ala Arg Ser Cys Arg Phe Lys Asn Lys
465                 470                 475                 480
Glu Pro Pro Ser Phe Leu Pro Leu Asn Ala Asp Cys His Ile Tyr Gly
                485                 490                 495
Gln Thr Leu Asp Leu Ser Arg Asn Asn Ile Phe Phe Ile Lys Pro Ser
            500                 505                 510
Asp Phe Gln His Leu Ser Phe Leu Lys Cys Leu Asn Leu Ser Gly Asn
        515                 520                 525
Thr Ile Gly Gln Thr Leu Asn Gly Ser Glu Leu Trp Pro Leu Arg Glu
    530                 535                 540
Leu Arg Tyr Leu Asp Phe Ser Asn Asn Arg Leu Asp Leu Leu Tyr Ser
545                 550                 555                 560
Thr Ala Phe Glu Glu Leu Gln Ser Leu Glu Val Leu Asp Leu Ser Ser
                565                 570                 575
Asn Ser His Tyr Phe Gln Ala Glu Gly Ile Thr His Met Leu Asn Phe
            580                 585                 590
Thr Lys Lys Leu Arg Leu Leu Asp Lys Leu Met Met Asn Asp Asn Asp
        595                 600                 605
Ile Ser Thr Ser Ala Ser Arg Thr Met Glu Ser Asp Ser Leu Arg Ile
    610                 615                 620
Leu Glu Phe Arg Gly Asn His Leu Asp Val Leu Trp Arg Ala Gly Asp
625                 630                 635                 640
Asn Arg Tyr Leu Asp Phe Phe Lys Asn Leu Phe Asn Leu Glu Val Leu
                645                 650                 655
Asp Ile Ser Arg Asn Ser Leu Asn Ser Leu Pro Pro Glu Val Phe Glu
            660                 665                 670
Gly Met Pro Pro Asn Leu Lys Asn Leu Ser Leu Ala Lys Asn Gly Leu
        675                 680                 685
Lys Ser Phe Phe Trp Asp Arg Leu Gln Leu Leu Lys His Leu Glu Ile
```

```
    690                 695                 700
Leu Asp Leu Ser His Asn Gln Leu Thr Lys Val Pro Glu Arg Leu Ala
705                 710                 715                 720
Asn Cys Ser Lys Ser Leu Thr Thr Leu Ile Leu Lys His Asn Gln Ile
                725                 730                 735
Arg Gln Leu Thr Lys Tyr Phe Leu Glu Asp Ala Leu Gln Leu Arg Tyr
            740                 745                 750
Leu Asp Ile Ser Ser Asn Lys Ile Gln Val Ile Gln Lys Thr Ser Phe
        755                 760                 765
Pro Glu Asn Val Leu Asn Asn Leu Glu Met Leu Val Leu His His Asn
    770                 775                 780
Arg Phe Leu Cys Asn Cys Asp Ala Val Trp Phe Val Trp Trp Val Asn
785                 790                 795                 800
His Thr Asp Val Thr Ile Pro Tyr Leu Ala Thr Asp Val Thr Cys Val
                805                 810                 815
Gly Pro Gly Ala His Lys Gly Gln Ser Val Ile Ser Leu Asp Leu Tyr
            820                 825                 830
Thr Cys Glu Leu Asp Leu Thr Asn Leu Ile Leu Phe Ser Val Ser Ile
        835                 840                 845
Ser Ser Val Leu Phe Leu Met Val Val Met Thr Thr Ser His Leu Phe
    850                 855                 860
Phe Trp Asp Met Trp Tyr Ile Tyr Tyr Phe Trp Lys Ala Lys Ile Lys
865                 870                 875                 880
Gly Tyr Gln His Leu Gln Ser Met Glu Ser Cys Tyr Asp Ala Phe Ile
                885                 890                 895
Val Tyr Asp Thr Lys Asn Ser Ala Val Thr Glu Trp Val Leu Gln Glu
            900                 905                 910
Leu Val Ala Lys Leu Glu Asp Pro Arg Glu Lys His Phe Asn Leu Cys
        915                 920                 925
Leu Glu Glu Arg Asp Trp Leu Pro Gly Gln Pro Val Leu Glu Asn Leu
    930                 935                 940
Ser Gln Ser Ile Gln Leu Ser Lys Lys Thr Val Phe Val Met Thr Gln
945                 950                 955                 960
Lys Tyr Ala Lys Thr Glu Ser Phe Lys Met Ala Phe Tyr Leu Ser His
                965                 970                 975
Gln Arg Leu Leu Asp Glu Lys Val Asp Val Ile Ile Leu Ile Phe Leu
            980                 985                 990
Glu Lys Pro Leu Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys Arg Leu
        995                 1000                1005
Cys Arg Ser Ser Val Leu Glu Trp Pro Ala Asn Pro Gln Ala His Pro
    1010                1015                1020
Tyr Phe Trp Gln Cys Leu Lys Asn Ala Leu Thr Thr Asp Asn His Val
1025                1030                1035                1040
Ala Tyr Ser Gln Met Phe Lys Glu Thr Val
                1045                1050
```

<210> 176
<211> 66
<212> PRT
<213> Mus musculus

<400> 176

```
Val Asp Val Ile Ile Leu Ile Phe Leu Val Lys Pro Phe Gln Lys Phe
 1               5                  10                  15
Asn Phe Leu Leu Arg Lys Arg Ile Ser Arg Ser Ser Val Leu Glu Cys
            20                  25                  30
Pro Pro Asn Pro Gln Ala His Pro Tyr Phe Cys Gln Cys Leu Lys Asn
        35                  40                  45
Ala Leu Thr Thr Asp Asn His Val Ala Tyr Ser Gln Met Phe Lys Glu
```

```
    50                  55                  60
Thr Val
65

      <210> 177
      <211> 54
      <212> PRT
      <213> Mus musculus

      <400> 177
Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys Arg Leu Cys Arg Ser Ser
 1               5                  10                  15
Val Leu Glu Trp Pro Ala Asn Pro Gln Ala His Pro Tyr Phe Trp Gln
            20                  25                  30
Cys Leu Lys Asn Ala Leu Thr Thr Asp Asn His Val Ala Tyr Ser Gln
        35                  40                  45
Met Phe Lys Glu Thr Val
    50

      <210> 178
      <211> 59
      <212> PRT
      <213> Mus musculus

      <400> 178
Leu Gly Lys Pro Leu Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys Arg
 1               5                  10                  15
Leu Cys Arg Ser Ser Val Leu Glu Trp Pro Ala Asn Pro Gln Ala His
            20                  25                  30
Pro Tyr Phe Trp Gln Cys Leu Lys Asn Ala Leu Thr Thr Asp Asn His
        35                  40                  45
Val Ala Tyr Ser Gln Met Phe Lys Glu Thr Val
    50                  55

      <210> 179
      <211> 84
      <212> PRT
      <213> Mus musculus

      <400> 179
Ile Glu Thr Phe Gln Met Pro Ser Phe Leu Ser Ile Gln Arg Leu Leu
 1               5                  10                  15
Asp Asp Lys Val Asp Val Ile Ile Leu Ile Phe Leu Glu Pro Leu Lys
            20                  25                  30
Ser Lys Phe Leu Gln Leu Arg Lys Arg Phe Cys Arg Ser Ser Val Leu
        35                  40                  45
Glu Trp Pro Ala Asn Pro Gln Ala His Pro Tyr Phe Trp Gln Cys Leu
    50                  55                  60
Lys Asn Ala Leu Thr Thr Asp Asn His Val Ala Tyr Ser Gln Met Phe
65                  70                  75                  80
Lys Glu Thr Val


      <210> 180
      <211> 25
      <212> DNA
      <213> Artificial Sequence

      <220>
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agttttcagt ggcaatcgcc ttgacatttt gtggaatgat gatgacaaca ggtatatctc    1980
cattttcaaa ggtctcaaga atctgacacg tctggattta tcccttaata ggctgaagca    2040
catcccaaat gaagcattcc ttaatttgcc agcgagtctc actgaactac atataaatga    2100
taatatgtta aagtttttta actggacatt actccagcag tttcctcgtc tcgagttgct    2160
tgacttacgt ggaaacaaac tactcttttt aactgatagc ctatctgact ttacatcttc    2220
ccttcggaca ctgctgctga gtcataacag gatttcccac ctaccctctg gctttctttc    2280
tgaagtcagt agtctgaagc acctcgattt aagttccaat ctgctaaaaa caatcaacaa    2340
atccgcactt gaaactaaga ccaccaccaa attatctatg ttggaactac acggaaaccc    2400
ctttgaatgc acctgtgaca ttggagattt ccgaagatgg atggatgaac atctgaatgt    2460
caaaattccc agactggtag atgtcatttg tgccagtcct ggggatcaaa gagggaagag    2520
tattgtgagt ctggagctaa caacttgtgt ttcagatgtc actgcagtga tattattttt    2580
cttcacgttc tttatcacca ccatggttat gttggctgcc ctggctcacc atttgtttta    2640
ctgggatgtt tggtttatat ataatgtgtg tttagctaag gtaaaaggct acaggtctct    2700
ttccacatcc caaacttttct atgatgctta catttcttat gacaccaaag acgcctctgt    2760
tactgactgg gtgataaatg agctgcgcta ccaccttgaa gagagccgag acaaaaacgt    2820
tctcctttgt ctagaggaga gggattggga cccgggattg gccatcatcg acaacctcat    2880
gcagagcatc aaccaaagca agaaaacagt atttgtttta accaaaaaat atgcaaaaag    2940
ctggaacttt aaaacagctt tttacttggc tttgcagagg ctaatggatg agaacatgga    3000
tgtgattata tttatcctgc tggagccagt gttacagcat tctcagtatt tgaggctacg    3060
gcagcggatc tgtaagagct ccatcctcca gtggcctgac aacccgaagg cagaaggctt    3120
gttttggcaa actctgagaa atgtggtctt gactgaaaat gattcacggt ataacaatat    3180
gtatgtcgat tccattaagc aatactaact gacgttaagt catgatttcg cgcaatcact    3240
agtgaattcg cggccgcctg caggtcgacc atatgggaga gctcccaacg cgttggatgc    3300
atagcttgag                                                          3310
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<210> 183
<211> 3123
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (0)...(0)
<223> Human TLR8 ORF

<400> 183

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tcctgtgagt tatgcgccga agaaaatttt tctagaagct atccttgtga tgagaaaaag     120
caaaatgact cagttattgc agagtgcagc aatcgtcgac tacaggaagt tccccaaacg     180
gtgggcaaat atgtgacaga actagacctg tctgataatt tcatcacaca cataacgaat     240
gaatcatttc aagggctgca aaatctcact aaaataaatc taaaccacaa ccccaatgta     300
cagcaccaga acggaaatcc cggtatacaa tcaaatggct tgaatatcac agacggggca     360
ttcctcaacc taaaaaacct aagggagtta ctgcttgaag acaaccagtt accccaaata     420
ccctctggtt tgccagagtc tttgacagaa cttagtctaa ttcaaaacaa tatatacaac     480
ataactaaag agggcatttc aagacttata aacttgaaaa atctctattt ggcctggaac     540
tgctatttta acaaagtttg cgagaaaact aacatagaag atggagtatt tgaaacgctg     600
acaaatttgg agttgctatc actatctttc aattctcttt cacacgtgcc acccaaactg     660
ccaagctccc tacgcaaact ttttctgagc aacacccaga tcaaatacat tagtgaagaa     720
gatttcaagg gattgataaa tttaacatta ctagatttaa gcgggaactg tccgaggtgc     780
ttcaatgccc catttccatg cgtgccttgt gatggtggtg cttcaattaa tatagatcgt     840
tttgcttttc aaaacttgac ccaacttcga tacctaaacc tctctagcac ttccctcagg     900
aagattaatg ctgcctggtt taaaaatatg cctcatctga aggtgctgga tcttgaattc     960
aactatttag tgggagaaat agcctctggg gcatttttaa cgatgctgcc ccgcttagaa    1020
atacttgact tgtcttttaa ctatataaag gggagttatc cacagcatat taatatttcc    1080
agaaacttct ctaaactttt gtctctacgg gcattgcatt taagaggtta tgtgttccag    1140
gaactcagag aagatgattt ccagcccctg atgcagcttc caaacttatc gactatcaac    1200
ttgggtatta attttattaa gcaaatcgat ttcaaacttt tccaaaattt ctccaatctg    1260
gaaattattt acttgtcaga aaacagaata tcaccgttgg taaaagatac ccggcagagt    1320
tatgcaaata gttcctcttt tcaacgtcat atccggaaac gacgctcaac agattttgag    1380
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tttgacccac attcgaactt ttatcatttc acccgtcctt taataaagcc acaatgtgct    1440
gcttatggaa aagccttaga tttaagcctc aacagtattt tcttcattgg gccaaaccaa    1500
tttgaaaatc ttcctgacat tgcctgttta aatctgtctg caaatagcaa tgctcaagtg    1560
ttaagtggaa ctgaattttc agccattcct catgtcaaat atttggattt gacaaacaat    1620
agactagact ttgataatgc tagtgctctt actgaattgt ccgacttgga agttctagat    1680
ctcagctata attcacacta tttcagaata gcaggcgtaa cacatcatct agaatttatt    1740
caaaatttca caaatctaaa agttttaaac ttgagccaca acaacattta tactttaaca    1800
gataagtata acctggaaag caagtccctg gtagaattag ttttcagtgg caatcgcctt    1860
gacattttgt ggaatgatga tgacaacagg tatatctcca ttttcaaagg tctcaagaat    1920
ctgacacgtc tggatttatc ccttaatagg ctgaagcaca tcccaaatga agcattcctt    1980
aatttgccag cgagtctcac tgaactacat ataaatgata atatgttaaa gtttttaac     2040
tggacattac tccagcagtt tcctcgtctc gagttgcttg acttacgtgg aaacaaacta    2100
ctcttttaa ctgatagcct atctgacttt acatcttccc ttcggacact gctgctgagt     2160
cataacagga tttcccacct accctctggc tttctttctg aagtcagtag tctgaagcac    2220
ctcgatttaa gttccaatct gctaaaaaca atcaacaaat ccgcacttga aactaagacc    2280
accaccaaat tatctatgtt ggaactacac ggaaacccct ttgaatgcac ctgtgacatt    2340
ggagatttcc gaagatggat ggatgaacat ctgaatgtca aaattcccag actggtagat    2400
gtcatttgtg ccagtcctgg ggatcaaaga gggaagagta ttgtgagtct ggagctaaca    2460
acttgtgttt cagatgtcac tgcagtgata ttatttttct tcacgttctt tatcaccacc    2520
atggttatgt tggctgccct ggctcaccat ttgttttact gggatgtttg gtttatatat    2580
aatgtgtgtt tagctaaggt aaaaggctac aggtctcttt ccacatccca aactttctat    2640
gatgcttaca tttcttatga caccaaagac gcctctgtta ctgactgggt gataaatgag    2700
ctgcgctacc accttgaaga gagccgagac aaaaacgttc tcctttgtct agaggagagg    2760
gattgggacc cgggattggc catcatcgac aacctcatgc agagcatcaa ccaaagcaag    2820
aaaacagtat ttgttttaac caaaaaatat gcaaaaagct ggaactttaa aacagctttt    2880
tacttggctt tgcagaggct aatggatgag aacatggatg tgattatatt tatcctgctg    2940
gagccagtgt tacagcattc tcagtatttg aggctacggc agcggatctg taagagctcc    3000
atcctccagt ggcctgacaa cccgaaggca gaaggcttgt tttggcaaac tctgagaaat    3060
gtggtcttga ctgaaaatga ttcacggtat aacaatatgt atgtcgattc cattaagcaa    3120
tac                                                                 3123
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<210> 184
<211> 1041
<212> PRT
<213> Homo sapiens

<400> 184

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Met Glu Asn Met Phe Leu Gln Ser Ser Met Leu Thr Cys Ile Phe Leu
 1               5                  10                  15
Leu Ile Ser Gly Ser Cys Glu Leu Cys Ala Glu Glu Asn Phe Ser Arg
            20                  25                  30
Ser Tyr Pro Cys Asp Glu Lys Lys Gln Asn Asp Ser Val Ile Ala Glu
        35                  40                  45
Cys Ser Asn Arg Arg Leu Gln Glu Val Pro Gln Thr Val Gly Lys Tyr
    50                  55                  60
Val Thr Glu Leu Asp Leu Ser Asp Asn Phe Ile Thr His Ile Thr Asn
65                  70                  75                  80
Glu Ser Phe Gln Gly Leu Gln Asn Leu Thr Lys Ile Asn Leu Asn His
                85                  90                  95
Asn Pro Asn Val Gln His Gln Asn Gly Asn Pro Gly Ile Gln Ser Asn
            100                 105                 110
Gly Leu Asn Ile Thr Asp Gly Ala Phe Leu Asn Leu Lys Asn Leu Arg
        115                 120                 125
Glu Leu Leu Leu Glu Asp Asn Gln Leu Pro Gln Ile Pro Ser Gly Leu
    130                 135                 140
Pro Glu Ser Leu Thr Glu Leu Ser Leu Ile Gln Asn Asn Ile Tyr Asn
145                 150                 155                 160
Ile Thr Lys Glu Gly Ile Ser Arg Leu Ile Asn Leu Lys Asn Leu Tyr
                165                 170                 175
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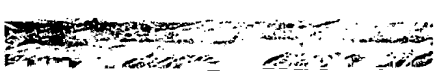
Leu Ala Trp Asn Cys Tyr Phe Asn Lys Val Cys Glu Lys Thr Asn Ile
180 185 190
Glu Asp Gly Val Phe Glu Thr Leu Thr Asn Leu Glu Leu Leu Ser Leu
195 200 205
Ser Phe Asn Ser Leu Ser His Val Pro Pro Lys Leu Pro Ser Ser Leu
210 215 220
Arg Lys Leu Phe Leu Ser Asn Thr Gln Ile Lys Tyr Ile Ser Glu Glu
225 230 235 240
Asp Phe Lys Gly Leu Ile Asn Leu Thr Leu Leu Asp Leu Ser Gly Asn
245 250 255
Cys Pro Arg Cys Phe Asn Ala Pro Phe Pro Cys Val Pro Cys Asp Gly
260 265 270
Gly Ala Ser Ile Asn Ile Asp Arg Phe Ala Phe Gln Asn Leu Thr Gln
275 280 285
Leu Arg Tyr Leu Asn Leu Ser Ser Thr Ser Leu Arg Lys Ile Asn Ala
290 295 300
Ala Trp Phe Lys Asn Met Pro His Leu Lys Val Leu Asp Leu Glu Phe
305 310 315 320
Asn Tyr Leu Val Gly Glu Ile Ala Ser Gly Ala Phe Leu Thr Met Leu
325 330 335
Pro Arg Leu Glu Ile Leu Asp Leu Ser Phe Asn Tyr Ile Lys Gly Ser
340 345 350
Tyr Pro Gln His Ile Asn Ile Ser Arg Asn Phe Ser Lys Leu Leu Ser
355 360 365
Leu Arg Ala Leu His Leu Arg Gly Tyr Val Phe Gln Glu Leu Arg Glu
370 375 380
Asp Asp Phe Gln Pro Leu Met Gln Leu Pro Asn Leu Ser Thr Ile Asn
385 390 395 400
Leu Gly Ile Asn Phe Ile Lys Gln Ile Asp Phe Lys Leu Phe Gln Asn
405 410 415
Phe Ser Asn Leu Glu Ile Ile Tyr Leu Ser Glu Asn Arg Ile Ser Pro
420 425 430
Leu Val Lys Asp Thr Arg Gln Ser Tyr Ala Asn Ser Ser Ser Phe Gln
435 440 445
Arg His Ile Arg Lys Arg Arg Ser Thr Asp Phe Glu Phe Asp Pro His
450 455 460
Ser Asn Phe Tyr His Phe Thr Arg Pro Leu Ile Lys Pro Gln Cys Ala
465 470 475 480
Ala Tyr Gly Lys Ala Leu Asp Leu Ser Leu Asn Ser Ile Phe Phe Ile
485 490 495
Gly Pro Asn Gln Phe Glu Asn Leu Pro Asp Ile Ala Cys Leu Asn Leu
500 505 510
Ser Ala Asn Ser Asn Ala Gln Val Leu Ser Gly Thr Glu Phe Ser Ala
515 520 525
Ile Pro His Val Lys Tyr Leu Asp Leu Thr Asn Asn Arg Leu Asp Phe
530 535 540
Asp Asn Ala Ser Ala Leu Thr Glu Leu Ser Asp Leu Glu Val Leu Asp
545 550 555 560
Leu Ser Tyr Asn Ser His Tyr Phe Arg Ile Ala Gly Val Thr His His
565 570 575
Leu Glu Phe Ile Gln Asn Phe Thr Asn Leu Lys Val Leu Asn Leu Ser
580 585 590
His Asn Asn Ile Tyr Thr Leu Thr Asp Lys Tyr Asn Leu Glu Ser Lys
595 600 605
Ser Leu Val Glu Leu Val Phe Ser Gly Asn Arg Leu Asp Ile Leu Trp
610 615 620
Asn Asp Asp Asp Asn Arg Tyr Ile Ser Ile Phe Lys Gly Leu Lys Asn
625 630 635 640
Leu Thr Arg Leu Asp Leu Ser Leu Asn Arg Leu Lys His Ile Pro Asn



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                645                 650                 655
Glu Ala Phe Leu Asn Leu Pro Ala Ser Leu Thr Glu Leu His Ile Asn
            660                 665                 670
Asp Asn Met Leu Lys Phe Phe Asn Trp Thr Leu Leu Gln Gln Phe Pro
        675                 680                 685
Arg Leu Glu Leu Leu Asp Leu Arg Gly Asn Lys Leu Leu Phe Leu Thr
    690                 695                 700
Asp Ser Leu Ser Asp Phe Thr Ser Ser Leu Arg Thr Leu Leu Leu Ser
705                 710                 715                 720
His Asn Arg Ile Ser His Leu Pro Ser Gly Phe Leu Ser Glu Val Ser
                725                 730                 735
Ser Leu Lys His Leu Asp Leu Ser Ser Asn Leu Leu Lys Thr Ile Asn
            740                 745                 750
Lys Ser Ala Leu Glu Thr Lys Thr Thr Thr Lys Leu Ser Met Leu Glu
        755                 760                 765
Leu His Gly Asn Pro Phe Glu Cys Thr Cys Asp Ile Gly Asp Phe Arg
    770                 775                 780
Arg Trp Met Asp Glu His Leu Asn Val Lys Ile Pro Arg Leu Val Asp
785                 790                 795                 800
Val Ile Cys Ala Ser Pro Gly Asp Gln Arg Gly Lys Ser Ile Val Ser
                805                 810                 815
Leu Glu Leu Thr Thr Cys Val Ser Asp Val Thr Ala Val Ile Leu Phe
            820                 825                 830
Phe Phe Thr Phe Phe Ile Thr Thr Met Val Met Leu Ala Ala Leu Ala
        835                 840                 845
His His Leu Phe Tyr Trp Asp Val Trp Phe Ile Tyr Asn Val Cys Leu
    850                 855                 860
Ala Lys Val Lys Gly Tyr Arg Ser Leu Ser Thr Ser Gln Thr Phe Tyr
865                 870                 875                 880
Asp Ala Tyr Ile Ser Tyr Asp Thr Lys Asp Ala Ser Val Thr Asp Trp
                885                 890                 895
Val Ile Asn Glu Leu Arg Tyr His Leu Glu Glu Ser Arg Asp Lys Asn
            900                 905                 910
Val Leu Leu Cys Leu Glu Glu Arg Asp Trp Asp Pro Gly Leu Ala Ile
        915                 920                 925
Ile Asp Asn Leu Met Gln Ser Ile Asn Gln Ser Lys Lys Thr Val Phe
    930                 935                 940
Val Leu Thr Lys Lys Tyr Ala Lys Ser Trp Asn Phe Lys Thr Ala Phe
945                 950                 955                 960
Tyr Leu Ala Leu Gln Arg Leu Met Asp Glu Asn Met Asp Val Ile Ile
                965                 970                 975
Phe Ile Leu Leu Glu Pro Val Leu Gln His Ser Gln Tyr Leu Arg Leu
            980                 985                 990
Arg Gln Arg Ile Cys Lys Ser Ser Ile Leu Gln Trp Pro Asp Asn Pro
        995                 1000                1005
Lys Ala Glu Gly Leu Phe Trp Gln Thr Leu Arg Asn Val Val Leu Thr
    1010                1015                1020
Glu Asn Asp Ser Arg Tyr Asn Asn Met Tyr Val Asp Ser Ile Lys Gln
1025                1030                1035                1040
Tyr
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<210> 185
<211> 19
<212> PRT
<213> Homo sapiens

<400> 185

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Met Lys Glu Ser Ser Leu Gln Asn Ser Ser Cys Ser Leu Gly Lys Glu
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 1               5                  10                  15
Thr Lys Lys
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<210> 186
<211> 1041
<212> PRT
<213> Homo sapiens

<400> 186

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Met Glu Asn Met Phe Leu Gln Ser Ser Met Leu Thr Cys Ile Phe Leu
 1               5                  10                  15
Leu Ile Ser Gly Ser Cys Glu Leu Cys Ala Glu Glu Asn Phe Ser Arg
            20                  25                  30
Ser Tyr Pro Cys Asp Glu Lys Lys Gln Asn Asp Ser Val Ile Ala Glu
        35                  40                  45
Cys Ser Asn Arg Arg Leu Gln Glu Val Pro Gln Thr Val Gly Lys Tyr
    50                  55                  60
Val Thr Glu Leu Asp Leu Ser Asp Asn Phe Ile Thr His Ile Thr Asn
65                  70                  75                  80
Glu Ser Phe Gln Gly Leu Gln Asn Leu Thr Lys Ile Asn Leu Asn His
                85                  90                  95
Asn Pro Asn Val Gln His Gln Asn Gly Asn Pro Gly Ile Gln Ser Asn
            100                 105                 110
Gly Leu Asn Ile Thr Asp Gly Ala Phe Leu Asn Leu Lys Asn Leu Arg
        115                 120                 125
Glu Leu Leu Leu Glu Asp Asn Gln Leu Pro Gln Ile Pro Ser Gly Leu
    130                 135                 140
Pro Glu Ser Leu Thr Glu Leu Ser Leu Ile Gln Asn Asn Ile Tyr Asn
145                 150                 155                 160
Ile Thr Lys Glu Gly Ile Ser Arg Leu Ile Asn Leu Lys Asn Leu Tyr
                165                 170                 175
Leu Ala Trp Asn Cys Tyr Phe Asn Lys Val Cys Glu Lys Thr Asn Ile
            180                 185                 190
Glu Asp Gly Val Phe Glu Thr Leu Thr Asn Leu Glu Leu Leu Ser Leu
        195                 200                 205
Ser Phe Asn Ser Leu Ser His Val Pro Pro Lys Leu Pro Ser Ser Leu
    210                 215                 220
Arg Lys Leu Phe Leu Ser Asn Thr Gln Ile Lys Tyr Ile Ser Glu Glu
225                 230                 235                 240
Asp Phe Lys Gly Leu Ile Asn Leu Thr Leu Leu Asp Leu Ser Gly Asn
                245                 250                 255
Cys Pro Arg Cys Phe Asn Ala Pro Phe Pro Cys Val Pro Cys Asp Gly
            260                 265                 270
Gly Ala Ser Ile Asn Ile Asp Arg Phe Ala Phe Gln Asn Leu Thr Gln
        275                 280                 285
Leu Arg Tyr Leu Asn Leu Ser Ser Thr Ser Leu Arg Lys Ile Asn Ala
    290                 295                 300
Ala Trp Phe Lys Asn Met Pro His Leu Lys Val Leu Asp Leu Glu Phe
305                 310                 315                 320
Asn Tyr Leu Val Gly Glu Ile Ala Ser Gly Ala Phe Leu Thr Met Leu
                325                 330                 335
Pro Arg Leu Glu Ile Leu Asp Leu Ser Phe Asn Tyr Ile Lys Gly Ser
            340                 345                 350
Tyr Pro Gln His Ile Asn Ile Ser Arg Asn Phe Ser Lys Leu Leu Ser
        355                 360                 365
Leu Arg Ala Leu His Leu Arg Gly Tyr Val Phe Gln Glu Leu Arg Glu
    370                 375                 380
Asp Asp Phe Gln Pro Leu Met Gln Leu Pro Asn Leu Ser Thr Ile Asn
```

385 390 395 400
Leu Gly Ile Asn Phe Ile Lys Gln Ile Asp Phe Lys Leu Phe Gln Asn
405 410 415
Phe Ser Asn Leu Glu Ile Ile Tyr Leu Ser Glu Asn Arg Ile Ser Pro
420 425 430
Leu Val Lys Asp Thr Arg Gln Ser Tyr Ala Asn Ser Ser Ser Phe Gln
435 440 445
Arg His Ile Arg Lys Arg Arg Ser Thr Asp Phe Glu Phe Asp Pro His
450 455 460
Ser Asn Phe Tyr His Phe Thr Arg Pro Leu Ile Lys Pro Gln Cys Ala
465 470 475 480
Ala Tyr Gly Lys Ala Leu Asp Leu Ser Leu Asn Ser Ile Phe Phe Ile
485 490 495
Gly Pro Asn Gln Phe Glu Asn Leu Pro Asp Ile Ala Cys Leu Asn Leu
500 505 510
Ser Ala Asn Ser Asn Ala Gln Val Leu Ser Gly Thr Glu Phe Ser Ala
515 520 525
Ile Pro His Val Lys Tyr Leu Asp Leu Thr Asn Asn Arg Leu Asp Phe
530 535 540
Asp Asn Ala Ser Ala Leu Thr Glu Leu Ser Asp Leu Glu Val Leu Asp
545 550 555 560
Leu Ser Tyr Asn Ser His Tyr Phe Arg Ile Ala Gly Val Thr His His
565 570 575
Leu Glu Phe Ile Gln Asn Phe Thr Asn Leu Lys Val Leu Asn Leu Ser
580 585 590
His Asn Asn Ile Tyr Thr Leu Thr Asp Lys Tyr Asn Leu Glu Ser Lys
595 600 605
Ser Leu Val Glu Leu Val Phe Ser Gly Asn Arg Leu Asp Ile Leu Trp
610 615 620
Asn Asp Asp Asp Asn Arg Tyr Ile Ser Ile Phe Lys Gly Leu Lys Asn
625 630 635 640
Leu Thr Arg Leu Asp Leu Ser Leu Asn Arg Leu Lys His Ile Pro Asn
645 650 655
Glu Ala Phe Leu Asn Leu Pro Ala Ser Leu Thr Glu Leu His Ile Asn
660 665 670
Asp Asn Met Leu Lys Phe Phe Asn Trp Thr Leu Leu Gln Gln Phe Pro
675 680 685
Arg Leu Glu Leu Leu Asp Leu Arg Gly Asn Lys Leu Leu Phe Leu Thr
690 695 700
Asp Ser Leu Ser Asp Phe Thr Ser Ser Leu Arg Thr Leu Leu Leu Ser
705 710 715 720
His Asn Arg Ile Ser His Leu Pro Ser Gly Phe Leu Ser Glu Val Ser
725 730 735
Ser Leu Lys His Leu Asp Leu Ser Ser Asn Leu Leu Lys Thr Ile Asn
740 745 750
Lys Ser Ala Leu Glu Thr Lys Thr Thr Thr Lys Leu Ser Met Leu Glu
755 760 765
Leu His Gly Asn Pro Phe Glu Cys Thr Cys Asp Ile Gly Asp Phe Arg
770 775 780
Arg Trp Met Asp Glu His Leu Asn Val Lys Ile Pro Arg Leu Val Asp
785 790 795 800
Val Ile Cys Ala Ser Pro Gly Asp Gln Arg Gly Lys Ser Ile Val Ser
805 810 815
Leu Glu Leu Thr Thr Cys Val Ser Asp Val Thr Ala Val Ile Leu Phe
820 825 830
Phe Phe Thr Phe Phe Ile Thr Thr Met Val Met Leu Ala Ala Leu Ala
835 840 845
His His Leu Phe Tyr Trp Asp Val Trp Phe Ile Tyr Asn Val Cys Leu
850 855 860

```
Ala Lys Val Lys Gly Tyr Arg Ser Leu Ser Thr Ser Gln Thr Phe Tyr
865                 870                 875                 880
Asp Ala Tyr Ile Ser Tyr Asp Thr Lys Asp Ala Ser Val Thr Asp Trp
                885                 890                 895
Val Ile Asn Glu Leu Arg Tyr His Leu Glu Glu Ser Arg Asp Lys Asn
            900                 905                 910
Val Leu Leu Cys Leu Glu Glu Arg Asp Trp Asp Pro Gly Leu Ala Ile
        915                 920                 925
Ile Asp Asn Leu Met Gln Ser Ile Asn Gln Ser Lys Lys Thr Val Phe
    930                 935                 940
Val Leu Thr Lys Lys Tyr Ala Lys Ser Trp Asn Phe Lys Thr Ala Phe
945                 950                 955                 960
Tyr Leu Ala Leu Gln Arg Leu Met Asp Glu Asn Met Asp Val Ile Ile
                965                 970                 975
Phe Ile Leu Leu Glu Pro Val Leu Gln His Ser Gln Tyr Leu Arg Leu
            980                 985                 990
Arg Gln Arg Ile Cys Lys Ser Ser Ile Leu Gln Trp Pro Asp Asn Pro
        995                 1000                1005
Lys Ala Glu Gly Leu Phe Trp Gln Thr Leu Arg Asn Val Val Leu Thr
    1010                1015                1020
Glu Asn Asp Ser Arg Tyr Asn Asn Met Tyr Val Asp Ser Ile Lys Gln
1025                1030                1035                1040
Tyr
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<210> 187
<211> 1059
<212> PRT
<213> Homo sapiens

<400> 187

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Met Lys Glu Ser Ser Leu Gln Asn Ser Ser Cys Ser Leu Gly Lys Glu
 1                5                  10                  15
Thr Lys Lys Glu Asn Met Phe Leu Gln Ser Ser Met Leu Thr Cys Ile
            20                  25                  30
Phe Leu Leu Ile Ser Gly Ser Cys Glu Leu Cys Ala Glu Glu Asn Phe
        35                  40                  45
Ser Arg Ser Tyr Pro Cys Asp Glu Lys Lys Gln Asn Asp Ser Val Ile
    50                  55                  60
Ala Glu Cys Ser Asn Arg Arg Leu Gln Glu Val Pro Gln Thr Val Gly
65                  70                  75                  80
Lys Tyr Val Thr Glu Leu Asp Leu Ser Asp Asn Phe Ile Thr His Ile
                85                  90                  95
Thr Asn Glu Ser Phe Gln Gly Leu Gln Asn Leu Thr Lys Ile Asn Leu
            100                 105                 110
Asn His Asn Pro Asn Val Gln His Gln Asn Gly Asn Pro Gly Ile Gln
        115                 120                 125
Ser Asn Gly Leu Asn Ile Thr Asp Gly Ala Phe Leu Asn Leu Lys Asn
    130                 135                 140
Leu Arg Glu Leu Leu Leu Glu Asp Asn Gln Leu Pro Gln Ile Pro Ser
145                 150                 155                 160
Gly Leu Pro Glu Ser Leu Thr Glu Leu Ser Leu Ile Gln Asn Asn Ile
                165                 170                 175
Tyr Asn Ile Thr Lys Glu Gly Ile Ser Arg Leu Ile Asn Leu Lys Asn
            180                 185                 190
Leu Tyr Leu Ala Trp Asn Cys Tyr Phe Asn Lys Val Cys Glu Lys Thr
        195                 200                 205
Asn Ile Glu Asp Gly Val Phe Glu Thr Leu Thr Asn Leu Glu Leu Leu
    210                 215                 220
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Ser Leu Ser Phe Asn Ser Leu Ser His Val Ser Pro Lys Leu Pro Ser
225                 230                 235                 240
Ser Leu Arg Lys Leu Phe Leu Ser Asn Thr Gln Ile Lys Tyr Ile Ser
                245                 250                 255
Glu Glu Asp Phe Lys Gly Leu Ile Asn Leu Thr Leu Leu Asp Leu Ser
            260                 265                 270
Gly Asn Cys Pro Arg Cys Phe Asn Ala Pro Phe Pro Cys Val Pro Cys
        275                 280                 285
Asp Gly Gly Ala Ser Ile Asn Ile Asp Arg Phe Ala Phe Gln Asn Leu
    290                 295                 300
Thr Gln Leu Arg Tyr Leu Asn Leu Ser Ser Thr Ser Leu Arg Lys Ile
305                 310                 315                 320
Asn Ala Ala Trp Phe Lys Asn Met Pro His Leu Lys Val Leu Asp Leu
                325                 330                 335
Glu Phe Asn Tyr Leu Val Gly Glu Ile Ala Ser Gly Ala Phe Leu Thr
            340                 345                 350
Met Leu Pro Arg Leu Glu Ile Leu Asp Leu Ser Phe Asn Tyr Ile Lys
        355                 360                 365
Gly Ser Tyr Pro Gln His Ile Asn Ile Ser Arg Asn Phe Ser Lys Pro
    370                 375                 380
Leu Ser Leu Arg Ala Leu His Leu Arg Gly Tyr Val Phe Gln Glu Leu
385                 390                 395                 400
Arg Glu Asp Asp Phe Gln Pro Leu Met Gln Leu Pro Asn Leu Ser Thr
                405                 410                 415
Ile Asn Leu Gly Ile Asn Phe Ile Lys Gln Ile Asp Phe Lys Leu Phe
            420                 425                 430
Gln Asn Phe Ser Asn Leu Glu Ile Ile Tyr Leu Ser Glu Asn Arg Ile
        435                 440                 445
Ser Pro Leu Val Lys Asp Thr Arg Gln Ser Tyr Ala Asn Ser Ser Ser
    450                 455                 460
Phe Gln Arg His Ile Arg Lys Arg Arg Ser Thr Asp Phe Glu Phe Asp
465                 470                 475                 480
Pro His Ser Asn Phe Tyr His Phe Thr Arg Pro Leu Ile Lys Pro Gln
                485                 490                 495
Cys Ala Ala Tyr Gly Lys Ala Leu Asp Leu Ser Leu Asn Ser Ile Phe
            500                 505                 510
Phe Ile Gly Pro Asn Gln Phe Glu Asn Leu Pro Asp Ile Ala Cys Leu
        515                 520                 525
Asn Leu Ser Ala Asn Ser Asn Ala Gln Val Leu Ser Gly Thr Glu Phe
    530                 535                 540
Ser Ala Ile Pro His Val Lys Tyr Leu Asp Leu Thr Asn Asn Arg Leu
545                 550                 555                 560
Asp Phe Asp Asn Ala Ser Ala Leu Thr Glu Leu Ser Asp Leu Glu Val
                565                 570                 575
Leu Asp Leu Ser Tyr Asn Ser His Tyr Phe Arg Ile Ala Gly Val Thr
            580                 585                 590
His His Leu Glu Phe Ile Gln Asn Phe Thr Asn Leu Lys Val Leu Asn
        595                 600                 605
Leu Ser His Asn Asn Ile Tyr Thr Leu Thr Asp Lys Tyr Asn Leu Glu
    610                 615                 620
Ser Lys Ser Leu Val Glu Leu Val Phe Ser Gly Asn Arg Leu Asp Ile
625                 630                 635                 640
Leu Trp Asn Asp Asp Asp Asn Arg Tyr Ile Ser Ile Phe Lys Gly Leu
                645                 650                 655
Lys Asn Leu Thr Arg Leu Asp Leu Ser Leu Asn Arg Leu Lys His Ile
            660                 665                 670
Pro Asn Glu Ala Phe Leu Asn Leu Pro Ala Ser Leu Thr Glu Leu His
        675                 680                 685
Ile Asn Asp Asn Met Leu Lys Phe Phe Asn Trp Thr Leu Leu Gln Gln
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690 695 700

Phe Pro Arg Leu Glu Leu Leu Asp Leu Arg Gly Asn Lys Leu Leu Phe
705 710 715 720

Leu Thr Asp Ser Leu Ser Asp Phe Thr Ser Ser Leu Arg Thr Leu Leu
725 730 735

Leu Ser His Asn Arg Ile Ser His Leu Pro Ser Gly Phe Leu Ser Glu
740 745 750

Val Ser Ser Leu Lys His Leu Asp Leu Ser Ser Asn Leu Leu Lys Thr
755 760 765

Ile Asn Lys Ser Ala Leu Glu Thr Lys Thr Thr Thr Lys Leu Ser Met
770 775 780

Leu Glu Leu His Gly Asn Pro Phe Glu Cys Thr Cys Asp Ile Gly Asp
785 790 795 800

Phe Arg Arg Trp Met Asp Glu His Leu Asn Val Lys Ile Pro Arg Leu
805 810 815

Val Asp Val Ile Cys Ala Ser Pro Gly Asp Gln Arg Gly Lys Ser Ile
820 825 830

Val Ser Leu Glu Leu Thr Thr Cys Val Ser Asp Val Thr Ala Val Ile
835 840 845

Leu Phe Phe Phe Thr Phe Phe Ile Thr Thr Met Val Met Leu Ala Ala
850 855 860

Leu Ala His His Leu Phe Tyr Trp Asp Val Trp Phe Ile Tyr Asn Val
865 870 875 880

Cys Leu Ala Lys Ile Lys Gly Tyr Arg Ser Leu Ser Thr Ser Gln Thr
885 890 895

Phe Tyr Asp Ala Tyr Ile Ser Tyr Asp Thr Lys Asp Ala Ser Val Thr
900 905 910

Asp Trp Val Ile Asn Glu Leu Arg Tyr His Leu Glu Glu Ser Arg Asp
915 920 925

Lys Asn Val Leu Leu Cys Leu Glu Glu Arg Asp Trp Asp Pro Gly Leu
930 935 940

Ala Ile Ile Asp Asn Leu Met Gln Ser Ile Asn Gln Ser Lys Lys Thr
945 950 955 960

Val Phe Val Leu Thr Lys Lys Tyr Ala Lys Ser Trp Asn Phe Lys Thr
965 970 975

Ala Phe Tyr Leu Ala Leu Gln Arg Leu Met Asp Glu Asn Met Asp Val
980 985 990

Ile Ile Phe Ile Leu Leu Glu Pro Val Leu Gln His Ser Gln Tyr Leu
995 1000 1005

Arg Leu Arg Gln Arg Ile Cys Lys Ser Ser Ile Leu Gln Trp Pro Asp
1010 1015 1020

Asn Pro Lys Ala Glu Gly Leu Phe Trp Gln Thr Leu Arg Asn Val Val
1025 1030 1035 1040

Leu Thr Glu Asn Asp Ser Arg Tyr Asn Asn Met Tyr Val Asp Ser Ile
1045 1050 1055

Lys Gln Tyr

<210> 188
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 188
gagagaaaca aacgttttac cttc 24

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gatcaataaa tcctccctgc aaaccaagat gaaaacgaac ttgtctattc tggagctaca    2340
tgggaactat tttgactgca cgtgtgacat aagtgatttt cgaagctggc tagatgaaaa    2400
tctgaatatc acaattccta aattggtaaa tgttatatgt tccaatcctg gggatcaaaa    2460
atcaaagagt atcatgagcc tagatctcac gacttgtgta tcggatacca ctgcagctgt    2520
cctgtttttc ctcacattcc ttaccacctc catggttatg ttggctgctc tggttcacca    2580
cctgttttac tgggatgttt ggtttatcta tcacatgtgc tctgctaagt taaaaggcta    2640
caggacttca tccacatccc aaactttcta tgatgcttat atttcttatg acaccaaaga    2700
tgcatctgtt actgactggg taatcaatga actgcgctac caccttgaag agagtgaaga    2760
caaaagtgtc ctcctttgtt tagaggagag ggattgggat ccaggattac ccatcattga    2820
taacctcatg cagagcataa accagagcaa gaaaacaatc tttgttttaa ccaagaaata    2880
tgccaagagc tggaacttta aaacagcttt ctacttggcc ttgcagaggc taatggatga    2940
gaacatggat gtgattattt tcatcctcct ggaaccagtg ttacagtact cacagtacct    3000
gaggcttcgg cagaggatct gtaagagctc catcctccag tggcccaaca atcccaaagc    3060
agaaaacttg ttttggcaaa gtctgaaaaa tgtggtcttg actgaaaatg attcacggta    3120
tgacgatttg tacattgatt ccattaggca atactagtga tgggaagtca cgactctgcc    3180
atcataaaaa cacacagctt ctccttacaa tgaaccgaat                          3220
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<210> 191
<211> 3096
<212> DNA
<213> Mus musculus

<220>
<221> misc_feature
<222> (0)...(0)
<223> Murine TLR8 ORF

<400> 191

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accagtgcca tcttccataa agcgaactat tccagaagct atccttgtga cgagataagg     120
cacaactccc ttgtgattgc agaatgcaac catcgtcaac tgcatgaagt tccccaaact     180
ataggcaagt atgtgacaaa catagacttg tcagacaatg ccattacaca tataacgaaa     240
gagtcctttc aaaagctgca aaacctcact aaaatcgatc tgaaccacaa tgccaaacaa     300
cagcacccaa atgaaaataa aaatggtatg aatattacag aaggggcact tctcagccta     360
agaaatctaa cagttttact gctggaagac aaccagttat atactatacc tgctgggttg     420
cctgagtctt tgaaagaact tagcctaatt caaaacaata tatttcaggt aactaaaaac     480
aacacttttg ggcttaggaa cttggaaaga ctctatttgg gctggaactg ctattttaaa     540
tgtaatcaaa cctttaaggt agaagatggg gcatttaaaa atcttataca cttgaaggta     600
ctctcattat ctttcaataa ccttttctat gtgcccccca aactaccaag ttctctaagg     660
aaacttttc tgagtaatgc caaaatcatg aacatcactc aggaagactt caaaggactg      720
gaaaatttaa cattactaga tctgagtgga aactgtccaa ggtgttacaa tgctccattt     780
ccttgcacac cttgcaagga aaactcatcc atccacatac atcctctggc ttttcaaagt     840
ctcacccaac ttctctatct aaacctttcc agcacttccc tcaggacgat tccttctacc     900
tggtttgaaa atctgtcaaa tctgaaggaa ctccatcttg aattcaacta tttagttcaa     960
gaaattgcct cgggggcatt tttaacaaaa ctacccagtt tacaaatcct tgatttgtcc    1020
ttcaactttc aatataagga atatttacaa tttattaata tttcctcaaa tttctctaag    1080
cttcgttctc tcaagaagtt gcacttaaga ggctatgtgt tccgagaact taaaaagaag    1140
catttcgagc atctccagag tcttccaaac ttggcaacca tcaacttggg cattaacttt    1200
attgagaaaa ttgatttcaa agctttccag aatttttcca aactcgacgt tatctattta    1260
tcaggaaatc gcatagcatc tgtattagat ggtacagatt attcctcttg gcgaaatcgt    1320
cttcggaaac ctctctcaac agacgatgat gagtttgatc cacacgtgaa tttttaccat    1380
agcaccaaac ctttaataaa gccacagtgt actgcttatg gcaaggcctt ggatttaagt    1440
ttgaacaata ttttcattat tgggaaaagc caatttgaag gttttcagga tatcgcctgc    1500
ttaaatctgt ccttcaatgc caatactcaa gtgtttaatg gcacagaatt ctcctccatg    1560
ccccacatta aatatttgga tttaaccaac aacagactag actttgatga taacaatgct    1620
ttcagtgatc ttcacgatct agaagtgctg gacctgagcc acaatgcaca ctatttcagt    1680
atagcagggg taacgcaccg tctaggattt atccagaact taataaacct cagggtgtta    1740
aacctgagcc acaatggcat ttacaccctc acagaggaaa gtgagctgaa aagcatctca    1800
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ctgaaagaat tggttttcag tggaaatcgt cttgaccatt tgtggaatgc aaatgatggc    1860
aaatactggt ccatttttaa aagtctccag aatttgatac gcctggactt atcatacaat    1920
aaccttcaac aaatcccaaa tggagcattc ctcaatttgc ctcagagcct ccaagagtta    1980
cttatcagtg gtaacaaatt acgtttcttt aattggacat tactccagta ttttcctcac    2040
cttcacttgc tggatttatc gagaaatgag ctgtattttc tacccaattg cctatctaag    2100
tttgcacatt ccctggagac actgctactg agccataatc atttctctca cctaccctct    2160
ggcttcctct ccgaagccag gaatctggtg cacctggatc taagtttcaa cacaataaag    2220
atgatcaata aatcctccct gcaaaccaag atgaaaacga acttgtctat tctggagcta    2280
catgggaact attttgactg cacgtgtgac ataagtgatt ttcgaagctg gctagatgaa    2340
aatctgaata tcacaattcc taaattggta aatgttatat gttccaatcc tggggatcaa    2400
aaatcaaaga gtatcatgag cctagatctc acgacttgtg tatcggatac cactgcagct    2460
gtcctgtttt tcctcacatt ccttaccacc tccatggtta tgttggctgc tctggttcac    2520
cacctgtttt actgggatgt ttggtttatc tatcacatgt gctctgctaa gttaaaaggc    2580
tacaggactt catccacatc ccaaactttc tatgatgctt atatttctta tgacaccaaa    2640
gatgcatctg ttactgactg ggtaatcaat gaactgcgct accaccttga agagagtgaa    2700
gacaaaagtg tcctcctttg tttagaggag agggattggg atccaggatt acccatcatt    2760
gataacctca tgcagagcat aaaccagagc aagaaaacaa tctttgtttt aaccaagaaa    2820
tatgccaaga gctggaactt taaaacagct ttctacttgg ccttgcagag gctaatggat    2880
gagaacatgg atgtgattat tttcatcctc ctggaaccag tgttacagta ctcacagtac    2940
ctgaggcttc ggcagaggat ctgtaagagc tccatcctcc agtggcccaa caatcccaaa    3000
gcagaaaact tgttttggca aagtctgaaa aatgtggtct tgactgaaaa tgattcacgg    3060
tatgacgatt tgtacattga ttccattagg caatac                              3096
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<210> 192
<211> 1032
<212> PRT
<213> Mus musculus

<400> 192

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Leu Ser Ser Gly Thr Ser Ala Ile Phe His Lys Ala Asn Tyr Ser Arg
            20                  25                  30
Ser Tyr Pro Cys Asp Glu Ile Arg His Asn Ser Leu Val Ile Ala Glu
        35                  40                  45
Cys Asn His Arg Gln Leu His Glu Val Pro Gln Thr Ile Gly Lys Tyr
    50                  55                  60
Val Thr Asn Ile Asp Leu Ser Asp Asn Ala Ile Thr His Ile Thr Lys
65                  70                  75                  80
Glu Ser Phe Gln Lys Leu Gln Asn Leu Thr Lys Ile Asp Leu Asn His
                85                  90                  95
Asn Ala Lys Gln Gln His Pro Asn Glu Asn Lys Asn Gly Met Asn Ile
            100                 105                 110
Thr Glu Gly Ala Leu Leu Ser Leu Arg Asn Leu Thr Val Leu Leu Leu
        115                 120                 125
Glu Asp Asn Gln Leu Tyr Thr Ile Pro Ala Gly Leu Pro Glu Ser Leu
    130                 135                 140
Lys Glu Leu Ser Leu Ile Gln Asn Asn Ile Phe Gln Val Thr Lys Asn
145                 150                 155                 160
Asn Thr Phe Gly Leu Arg Asn Leu Glu Arg Leu Tyr Leu Gly Trp Asn
                165                 170                 175
Cys Tyr Phe Lys Cys Asn Gln Thr Phe Lys Val Glu Asp Gly Ala Phe
            180                 185                 190
Lys Asn Leu Ile His Leu Lys Val Leu Ser Leu Ser Phe Asn Asn Leu
        195                 200                 205
Phe Tyr Val Pro Pro Lys Leu Pro Ser Ser Leu Arg Lys Leu Phe Leu
    210                 215                 220
Ser Asn Ala Lys Ile Met Asn Ile Thr Gln Glu Asp Phe Lys Gly Leu
225                 230                 235                 240
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Glu Asn Leu Thr Leu Leu Asp Leu Ser Gly Asn Cys Pro Arg Cys Tyr
                  245                 250                 255
Asn Ala Pro Phe Pro Cys Thr Pro Cys Lys Glu Asn Ser Ser Ile His
              260                 265                 270
Ile His Pro Leu Ala Phe Gln Ser Leu Thr Gln Leu Leu Tyr Leu Asn
          275                 280                 285
Leu Ser Ser Thr Ser Leu Arg Thr Ile Pro Ser Thr Trp Phe Glu Asn
      290                 295                 300
Leu Ser Asn Leu Lys Glu Leu His Leu Glu Phe Asn Tyr Leu Val Gln
305                 310                 315                 320
Glu Ile Ala Ser Gly Ala Phe Leu Thr Lys Leu Pro Ser Leu Gln Ile
                  325                 330                 335
Leu Asp Leu Ser Phe Asn Phe Gln Tyr Lys Glu Tyr Leu Gln Phe Ile
              340                 345                 350
Asn Ile Ser Ser Asn Phe Ser Lys Leu Arg Ser Leu Lys Lys Leu His
          355                 360                 365
Leu Arg Gly Tyr Val Phe Arg Glu Leu Lys Lys Lys His Phe Glu His
      370                 375                 380
Leu Gln Ser Leu Pro Asn Leu Ala Thr Ile Asn Leu Gly Ile Asn Phe
385                 390                 395                 400
Ile Glu Lys Ile Asp Phe Lys Ala Phe Gln Asn Phe Ser Lys Leu Asp
                  405                 410                 415
Val Ile Tyr Leu Ser Gly Asn Arg Ile Ala Ser Val Leu Asp Gly Thr
              420                 425                 430
Asp Tyr Ser Ser Trp Arg Asn Arg Leu Arg Lys Pro Leu Ser Thr Asp
          435                 440                 445
Asp Asp Glu Phe Asp Pro His Val Asn Phe Tyr His Ser Thr Lys Pro
      450                 455                 460
Leu Ile Lys Pro Gln Cys Thr Ala Tyr Gly Lys Ala Leu Asp Leu Ser
465                 470                 475                 480
Leu Asn Asn Ile Phe Ile Ile Gly Lys Ser Gln Phe Glu Gly Phe Gln
                  485                 490                 495
Asp Ile Ala Cys Leu Asn Leu Ser Phe Asn Ala Asn Thr Gln Val Phe
              500                 505                 510
Asn Gly Thr Glu Phe Ser Ser Met Pro His Ile Lys Tyr Leu Asp Leu
          515                 520                 525
Thr Asn Asn Arg Leu Asp Phe Asp Asp Asn Asn Ala Phe Ser Asp Leu
      530                 535                 540
His Asp Leu Glu Val Leu Asp Leu Ser His Asn Ala His Tyr Phe Ser
545                 550                 555                 560
Ile Ala Gly Val Thr His Arg Leu Gly Phe Ile Gln Asn Leu Ile Asn
                  565                 570                 575
Leu Arg Val Leu Asn Leu Ser His Asn Gly Ile Tyr Thr Leu Thr Glu
              580                 585                 590
Glu Ser Glu Leu Lys Ser Ile Ser Leu Lys Glu Leu Val Phe Ser Gly
          595                 600                 605
Asn Arg Leu Asp His Leu Trp Asn Ala Asn Asp Gly Lys Tyr Trp Ser
      610                 615                 620
Ile Phe Lys Ser Leu Gln Asn Leu Ile Arg Leu Asp Leu Ser Tyr Asn
625                 630                 635                 640
Asn Leu Gln Gln Ile Pro Asn Gly Ala Phe Leu Asn Leu Pro Gln Ser
                  645                 650                 655
Leu Gln Glu Leu Leu Ile Ser Gly Asn Lys Leu Arg Phe Phe Asn Trp
              660                 665                 670
Thr Leu Leu Gln Tyr Phe Pro His Leu His Leu Leu Asp Leu Ser Arg
          675                 680                 685
Asn Glu Leu Tyr Phe Leu Pro Asn Cys Leu Ser Lys Phe Ala His Ser
      690                 695                 700
Leu Glu Thr Leu Leu Leu Ser His Asn His Phe Ser His Leu Pro Ser
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705 710 715 720
Gly Phe Leu Ser Glu Ala Arg Asn Leu Val His Leu Asp Leu Ser Phe
725 730 735
Asn Thr Ile Lys Met Ile Asn Lys Ser Ser Leu Gln Thr Lys Met Lys
740 745 750
Thr Asn Leu Ser Ile Leu Glu Leu His Gly Asn Tyr Phe Asp Cys Thr
755 760 765
Cys Asp Ile Ser Asp Phe Arg Ser Trp Leu Asp Glu Asn Leu Asn Ile
770 775 780
Thr Ile Pro Lys Leu Val Asn Val Ile Cys Ser Asn Pro Gly Asp Gln
785 790 795 800
Lys Ser Lys Ser Ile Met Ser Leu Asp Leu Thr Thr Cys Val Ser Asp
805 810 815
Thr Thr Ala Ala Val Leu Phe Phe Leu Thr Phe Leu Thr Thr Ser Met
820 825 830
Val Met Leu Ala Ala Leu Val His His Leu Phe Tyr Trp Asp Val Trp
835 840 845
Phe Ile Tyr His Met Cys Ser Ala Lys Leu Lys Gly Tyr Arg Thr Ser
850 855 860
Ser Thr Ser Gln Thr Phe Tyr Asp Ala Tyr Ile Ser Tyr Asp Thr Lys
865 870 875 880
Asp Ala Ser Val Thr Asp Trp Val Ile Asn Glu Leu Arg Tyr His Leu
885 890 895
Glu Glu Ser Glu Asp Lys Ser Val Leu Leu Cys Leu Glu Glu Arg Asp
900 905 910
Trp Asp Pro Gly Leu Pro Ile Ile Asp Asn Leu Met Gln Ser Ile Asn
915 920 925
Gln Ser Lys Lys Thr Ile Phe Val Leu Thr Lys Lys Tyr Ala Lys Ser
930 935 940
Trp Asn Phe Lys Thr Ala Phe Tyr Leu Ala Leu Gln Arg Leu Met Asp
945 950 955 960
Glu Asn Met Asp Val Ile Ile Phe Ile Leu Leu Glu Pro Val Leu Gln
965 970 975
Tyr Ser Gln Tyr Leu Arg Leu Arg Gln Arg Ile Cys Lys Ser Ser Ile
980 985 990
Leu Gln Trp Pro Asn Asn Pro Lys Ala Glu Asn Leu Phe Trp Gln Ser
995 1000 1005
Leu Lys Asn Val Val Leu Thr Glu Asn Asp Ser Arg Tyr Asp Asp Leu
1010 1015 1020
Tyr Ile Asp Ser Ile Arg Gln Tyr
1025 1030

<210> 193
<211> 185
<212> PRT
<213> Mus musculus

<400> 193
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20 25 30
Ser Ser Leu Gln Thr Lys Met Lys Thr Asn Leu Ser Ile Leu Glu Leu
35 40 45
His Gly Asn Tyr Phe Asp Cys Thr Cys Asp Ile Ser Asp Phe Arg Ser
50 55 60
Trp Leu Asp Glu Asn Leu Asn Ile Thr Ile Pro Lys Leu Val Asn Val
65 70 75 80
Ile Cys Ser Asn Pro Gly Asp Gln Lys Ser Lys Ser Ile Met Ser Leu

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                85                  90                  95
Asp Leu Thr Thr Cys Val Ser Asp Thr Thr Ala Ala Val Leu Phe Phe
            100                 105                 110
Leu Thr Phe Leu Thr Thr Ser Met Val Met Leu Ala Ala Leu Val His
        115                 120                 125
His Leu Phe Tyr Trp Asp Val Trp Phe Ile Tyr His Met Cys Ser Ala
    130                 135                 140
Lys Leu Lys Gly Tyr Arg Thr Ser Ser Thr Ser Gln Thr Phe Tyr Asp
145                 150                 155                 160
Ala Tyr Ile Ser Tyr Asp Thr Lys Asp Ala Ser Val Thr Asp Trp Val
                165                 170                 175
Ile Asn Glu Leu Arg Tyr His Leu Glu
            180                 185
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<210> 194
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 194
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<210> 195
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 195
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<210> 196
<211> 16
<212> PRT
<213> Unknown

<220>
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<400> 196
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<210> 197
<211> 16
<212> PRT
<213> Homo sapiens

<400> 197
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 1               5                  10                  15
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<210> 198
<211> 16

<212> PRT
<213> Mus musculus

<400> 198
Gly Asn Cys Arg Arg Cys Asp His Ala Pro Asn Pro Cys Met Ile Cys
1 5 10 15

<210> 199
<211> 16
<212> PRT
<213> Homo sapiens

<400> 199
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<210> 200
<211> 16
<212> PRT
<213> Mus musculus

<400> 200
Gly Asn Cys Pro Arg Cys Tyr Asn Val Pro Tyr Pro Cys Thr Pro Cys
1 5 10 15

<210> 201
<211> 16
<212> PRT
<213> Homo sapiens

<400> 201
Gly Asn Cys Pro Arg Cys Phe Asn Ala Pro Phe Pro Cys Val Pro Cys
1 5 10 15

<210> 202
<211> 16
<212> PRT
<213> Mus musculus

<400> 202
Gly Asn Cys Pro Arg Cys Tyr Asn Ala Pro Phe Pro Cys Thr Pro Cys
1 5 10 15

<210> 203
<211> 31
<212> PRT
<213> Homo sapiens

<400> 203
Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Xaa Leu Xaa Xaa Xaa
1 5 10 15
Xaa Xaa Xaa Xaa Xaa Xaa Lys Leu Xaa Xaa Xaa Xaa Xaa Xaa Ser
20 25 30

<210> 204
<211> 31
<212> PRT
<213> Mus musculus

<400> 204
Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Xaa Leu Xaa Xaa Xaa
1 5 10 15
Xaa Xaa Xaa Xaa Xaa Xaa Ser Leu Xaa Xaa Xaa Xaa Xaa Xaa Ser
20 25 30

<210> 205
<211> 31
<212> PRT
<213> Homo sapiens

<400> 205
Lys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Xaa Asp Xaa Xaa Xaa
1 5 10 15
Xaa Xaa Xaa Xaa Xaa Xaa Asp Leu Xaa Xaa Xaa Xaa Xaa Xaa Tyr
20 25 30

<210> 206
<211> 31
<212> PRT
<213> Mus musculus

<400> 206
Lys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Xaa Asp Xaa Xaa Xaa
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Xaa Xaa Xaa Xaa Xaa Xaa Asp Leu Xaa Xaa Xaa Xaa Xaa Xaa His
20 25 30

<210> 207
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
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<210> 210
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<213> Homo sapiens

<400> 210
Gln Val Leu Asp Leu Ser Arg Asn Lys Leu Asp Leu Tyr His Glu His
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Ser Phe Thr Glu Leu Pro Arg Leu Glu Ala Leu Asp Leu Ser Tyr
20 25 30

<210> 211
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<212> PRT
<213> Mus musculus

<400> 211
Gln Val Leu Asp Leu Ser His Asn Lys Leu Asp Leu Tyr His Trp Lys
1 5 10 15
Ser Phe Ser Glu Leu Pro Gln Leu Gln Ala Leu Asp Leu Ser Tyr
20 25 30

<210> 212
<211> 31
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<213> Homo sapiens

<400> 212
Arg Tyr Leu Asp Phe Ser Asn Asn Arg Leu Asp Leu Leu His Ser Thr
1 5 10 15
Ala Phe Glu Glu Leu His Lys Leu Glu Val Leu Asp Ile Ser Ser
20 25 30

<210> 213
<211> 31
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<213> Mus musculus

<400> 213
Arg Tyr Leu Asp Phe Ser Asn Asn Arg Leu Asp Leu Leu Tyr Ser Thr
1 5 10 15
Ala Phe Glu Glu Leu Gln Ser Leu Glu Val Leu Asp Leu Ser Ser
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<210> 214
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<400> 214
Lys Tyr Leu Asp Leu Thr Asn Asn Arg Leu Asp Phe Asp Asn Ala Ser
1 5 10 15
Ala Leu Thr Glu Leu Ser Asp Leu Glu Val Leu Asp Leu Ser Tyr

20 25 30

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<400> 215
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Ala Phe Ser Asp Leu His Asp Leu Glu Val Leu Asp Leu Ser His
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<400> 217
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<210> 218
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<400> 218
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